TESTING THE INFLUENCE OF GENDERED HARASSMENT ON MENTAL HEALTH OUTCOMES IN ADOLESCENCE USING LONGITUDINAL STRUCTURAL EQUATION MODELING

BY

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DISSERTATION

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ABSTRACT

Gendered harassment, including sexual harassment and homophobic name calling, is prevalent in schools and is linked to negative outcomes including depression, anxiety, suicidality, substance abuse, and personal distress (Chiodo, Wolfe, Crooks, Hughes, & Jaffe, 2009; Espelage, Aragon, Birkett, & Koenig, 2008; Espelage, Low, & De La Rue, 2012; Gruber & Fineran, 2007). However, much of the extant literature is cross-sectional, and rarely are perpetrators of these behaviors included in studies of outcomes. Therefore, the current study examined the effects of changes in gendered harassment perpetration and victimization on changes in mental health outcomes with structural equation modeling. These behaviors are in the context of a patriarchal society (Kimmel & Mahler, 2003). Given this milieu, the current study also investigated the impact of gender as well as gender attitudes on gendered harassment. In addition, a cross-lagged model of gendered harassment behaviors over time was tested. Participants included 3,549 students from four Midwestern middle schools (50.4% female, 49% African American, 34% white, 6% Hispanic, and 2% Asian) at three time points (13 years old, 16 years old, and 17 years old). Results indicated that increases from age 13 to 17 in sexual harassment perpetration and victimization as well homophobic name-calling perpetration and victimization all predict increases in depression symptoms and substance use. Gender did not moderate these pathways. The role of gender attitudes were shown to be complex, as gender inequity attitudes were significantly associated with sexual harassment perpetration and homophobic victimization, while gender stereotyped attitudes were associated with sexual harassment perpetration and victimization as well as homophobic perpetration. Finally, in terms of associations between victimization and

perpetration, both perpetration and victimization were related to themselves across each wave, with additional associations between victimization and perpetration across waves for sexual harassment but not for homophobic name-calling. These findings highlight that negative outcomes are associated with gendered harassment for all involved, and emphasizes the importance of prevention efforts. Implications for school interventions are discussed.

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CHAPTER 1

INTRODUCTION

Aggression in schools is the cause of much concern nationwide; high profile events like school shootings have captured the attention of students, teachers, parents, and policymakers alike. Cases of sexual assault at secondary and post-secondary institutions are written about with consternation. Sexual harassment and homophobic victimization, two hallmarks of gendered harassment, may at times be considered minor concerns as compared to these shocking tragedies. However, the gendered nature of violence in our schools indicates that these lesser acts are indicative of a larger societal force that seems to equate masculinity with violence and strength, while femininity is equated with passivity and weakness (Kimmel & Mahler, 2003). In this patriarchal culture, boys must perform masculinity in order to prove their heterosexuality along with their power, and students who are questioning their sexuality or identify as lesbian, gay, or bisexual are at risk for being exposed as not behaving in a properly gendered fashion.

The pressure to perform gender correctly, which includes sexual orientation in its purview, is an integral aspect of bullying and aggression in schools (Klein & Chancer, 2006). However, many bullying prevention programs as well as the broader discussion about safety in schools misses the mark by ignoring homophobic name-calling and sexual harassment (Kimmel & Mahler, 2003; Klein & Chancer, 2006). Most anti-bullying programs overlook the topic of homophobia and homophobic harassment altogether in both policy and practice. Among 23 major anti-bullying intervention programs, not even one offered intervention strategies for homophobic victimization (Birkett, Espelage, & Stein, 2008).

Extant literature indicates that gendered harassment leads to negative mental health outcomes (Bucchianeri, Eisenberg, Wall, Piran, & Neumark-Sztainer, 2013; Woodford, Han, Craig, Lim, & Matney, 2014). Although this link between the effects of harassment based on gender and perceived sexual orientation on mental health outcomes has been well established, the literature is largely cross-sectional and often based on retrospective self-report. The absence of longitudinal research in this area means that much of the literature is lacking in both complexity and a closer consideration of which aspects of harassment lead to specific mental health concerns. Additionally, much of the literature is focused solely on the outcomes of victimization, which ignores the important relation between victimization and perpetration as well as between perpetration and negative mental health outcomes (Bucchianeri et al., 2013). Therefore, the present study tested the link between both gender-based victimization and perpetration and negative mental health outcomes over time.

The developmental time period considered here spans from middle to high school; students surveyed in the first wave of data were on average 13 years old (7^{th} grade) and were 16 (10^{th} grade) and 17 (11^{th} grade) years old on average in the second and third waves of data respectively. This time span in adolescents' development is an important period to consider in terms of the prevalence of gendered harassment. Sexual harassment increases throughout early adolescence and levels off by late high school; the age range analyzed here includes this period of potential increase and leveling off of harassment and will therefore be more likely to capture the effects of gendered harassment behaviors over time (Pepler et al., 2006; Petersen & Hyde, 2009). Pubertal changes that commonly occur during middle school, as captured by Wave 1 here, have been linked to increased

sexual harassment victimization in 5th through 9th grade, with both boys and girls with advanced pubertal status throughout this time period being more likely to experience harassment by 9th grade (Juvonen & Graham, 2001; Petersen & Hyde, 2009). Consequently, this study examined how students' experiences of gendered harassment during this time span affected their mental health over time.

More broadly, this period of adolescence is a time when gender roles are explored and formed, with early adolescence being a time of escalation of gender-related role expectations (Hill, 1983). Peers, family, and school climate, as well as broader societal forces including the media, all have important roles to play in creating norms of gendered behavior as students model and practice the various interactions they observe on a daily basis (Hill, 1983). The accompanying biological and pubertal changes that occur, as well as increases in cognitive complexity and capacity, points to this period as important for the development of acceptable behaviors and adaptive responses to stress, and is a complex time of change and adjustment (Hill, 1983). Subsequently, examining the mental health outcomes of gendered harassment is an illuminating aspect of understanding adolescents' response to difficult experiences and deserves further attention.

Given the importance of gender performance and the dominance of masculinity in the construct of gendered harassment, the current study also considered adolescent students' attitudes regarding gender equality and gender stereotypes. The inclusion of student attitudes as an aspect of the analysis allowed for a deeper understanding of the connection between students' experiences of gendered harassment and their subsequent mental health. Additionally, adolescence is a vital period for developing moral reasoning and attitudes regarding violence; therefore, from a prevention perspective the age range

studied here is important in order to better understand how attitudes regarding gender equity impact gendered harassment and subsequent experiences of mental health concerns (Centers for Disease Control and Prevention, 2016). Research indicates that higher gender equity can prevent both female intimate partner violence victimization as well as male intimate partner violence perpetration (Gomez, Speizer, & Moracco, 2011). In the current study, the moderating effect of gender equity on the link between gendered harassment and mental health effects was tested. Gender was also tested as a moderator in order to better understand differences between gendered harassment experiences for males and females.

The current study used the analytic approach of longitudinal structural equation modeling in order to capitalize on the richness of the data available. This approach allows for latent variables to be tested using the creation of measurement models that capture the relation between the observed variables measured with survey data and the latent variables that represent the constructs of interest. A benefit of this analytic approach is that parameters are calculated simultaneously so that coefficients can be compared across constructs and when moderators are introduced (Farrell, 1994). Each form of gendered harassment was modeled separately in order to better understand the specific effects of each behavior. Within each model, gendered harassment differences from Wave 1 to Wave 3 were entered to predict changes in depressive symptoms and drug use from Wave 1 to Wave 3. Depression and drug use were modeled simultaneously and correlations were included across waves and at the item level. Moderators were then included to test the effect of gender and gender equity attitudes on the relation between gendered harassment and mental health outcomes. An additional model was tested to evaluate the

relation between various forms of gendered harassment over time; a cross-lag model was used in this case to allow for various pathways to be created across time and between constructs.

In sum, this study addresses the gap in the literature of sexual and homophobic harassment by examining these two constructs in tandem using structural equation modeling. The current study considered longitudinally gender-based harassment and these behaviors' effects on mental health. In other words, students' experiences of sexual harassment victimization and perpetration as well as homophobic perpetration and victimization from middle to high school were modeled to determine their effect on changes in depression and substance use over time, with gender identity and gender equity attitudes both included as moderators. An additional model was tested to examine the connection between forms of gendered harassment over time. Chapter 2 describes the literature on negative mental health outcomes due to sexual harassment and homophobic victimization in more detail as well as the literature on developmental changes in gendered harassment. Chapter 3 outlines the study methods, including participants, measures, and analyses, while Chapter 4 reviews the results of the data analysis, including figures and tables, and Chapter 5 highlights the significance and implications of these results.

CHAPTER 2

LITERATURE REVIEW

This chapter summarizes the literature on gendered harassment, including support for studying sexual harassment and homophobic teasing in tandem. Next, the literature on mental health outcomes as they relate to gendered harassment is considered. Then, the current literature on gender equity and its relation to students' experiences of gendered harassment is reviewed. Later, the extant literature regarding the relation between gendered harassment perpetration and victimization over time is discussed. Subsequently, the research on gender and sexual orientation as they relate to gendered harassment victimization and perpetration is described. Finally, the purpose of the current study is summarized and research questions are presented.

Gendered Harassment

Both sexual harassment and homophobic teasing fall under the broader construct of gendered harassment (Meyer, 2008). This term encompasses aggressive acts that serve to reinforce heteronormativity and sexism. Because of the patriarchal power structures in society that support hegemonic masculinity, homophobia and sexual harassment are both used as a means to reinforce and reify the masculine and are both included in the present study (Connell, 1987). Feminist theories indicate that harassment serves as a form of social control, reinforcing women's lower rank across society, including in employment, education, and interpersonal relationships (Benson & Thomson, 1982; Shoop & Edwards, 1994). Sexual harassment can be seen as an attempt to uphold patriarchy by reinforcing a masculine point of view and subsequently keep women in subordinate positions (Fineran, 2002; O'Neil & Egan, 1993). For adolescents, the harassment that they experience and

enact is centered on conformity to gender stereotypes, whether that is through homophobic or sexist channels (Shakeshaft et al., 1995).

Therefore, homophobic name-calling is an aspect of reinforcing traditional masculinity and performing a form of masculinity that is anti-feminine, emotionally restrictive, competitive, and aggressive (Levant, 1996; Pleck, 1995). In schools, where harassment can occur without much comment from the teachers and staff, youth can be seen as receiving not only permission but also training to become batterers and harassers in their adult lives (Meyer, 2008; Stein, 1995). Given this relation between homophobic name-calling and sexual harassment in reinforcing heterosexual masculinity for adolescents, the current study addressed the constructs of sexual harassment and homophobic name-calling as aspects of the broader concept of gendered harassment.

More specifically, sexual harassment is a legally defined term that includes unwelcome verbal, nonverbal, and physical behaviors that interfere with individuals' rights to receive an equal education (U.S. Department of Education, Office for Civil Rights, 2001). It exists across work and educational settings and is understood to include harassment that is degrading towards non-masculine gender presentation, unwanted sexual attention, and sexual coercion including *quid pro quo* harassment (Gelfand, Fitzgerald, & Drasgow, 1995). The extant literature indicates a wide range of estimated prevalence rates of sexual harassment in schools, from between 23% and 87% (Clear et al., 2014). 40% of males and 56% of females in seventh through twelfth grade reported experiencing sexual harassment during the 2010-2011 school year (American Association of University Women [AAUW], 2011). This metric of sexual harassment included homophobic teasing in its count. This same study found 81% of students experienced

some form of sexual harassment, including either physical or non-physical forms, at some point during their lives (AAUW, 2011). As is obvious from the large percentage of males who experience sexual harassment, this sexist form of aggression does not simply serve to keep females in a socially subordinate position; it is also a means for keeping male behavior in line with traditional masculinity. Therefore, the current study considered the impact of sexual harassment victimization on both males and females.

Homophobic name-calling also serves to reinforce traditional masculinity and is defined as a form of hate language that includes slurs associated with an individual's presumed or assumed sexual orientation, often stated in a pejorative manner. During the 2009-10 school year, 3% of public schools reported disciplinary issues with students sexually harassing other students based on sexual orientation or gender identity (Robers, Zhang, Morgan, & Musu-Gillette, 2015). Between 1999 and 2009, 6% of public schools reported that students harassed other students based on sexual orientation or gender identity at least once per week (Robers et al., 2015). In 2014, 1.1% of 12- to 18-year old students reported being the target of hate-related words regarding their presumed sexual orientation (Robers et al., 2015).

These percentages are much lower than that found when students are surveyed regarding the occurrence of being called homophobic epithets, regardless of presumed or actual sexual orientation. In a recent Midwest sample of 11-year-old students, 31.3% of students reported being the victim of homophobic name-calling and 33.7% of students endorsed calling other students homophobic epithets (Rinehart & Espelage, 2015). These rates are much higher when considering specifically those students who identify as gay or lesbian; in one study, 91% of gay and lesbian students reported hearing homophobic

epithets at school (Kosciw, 2004). Given the high prevalence rates of homophobic teasing for students of all sexual orientations, the current study assessed the impact of homophobic epithets on lesbian, gay, bisexual, as well as heterosexual students.

Mental Health and Gendered Harassment

The negative effects of gendered harassment have been studied both qualitatively and quantitatively. In terms of sexual harassment, the extant literature indicates that being a victim of these behaviors is associated with various negative outcomes, including issues related to both mental and physical health, life satisfaction, educational outcomes, and substance abuse (Bucchianeri et al., 2013; Chiodo et al., 2009; Espelage et al., 2012; Gruber & Fineran, 2007; Hand & Sanchez, 2000; Lee, Croninger, Linn, & Chen, 1996; Mitchell, Ybarra, & Korchmaros, 2014; Ormerod, Collinsworth, & Perry, 2008; Stein, Marshall, & Tropp, 1993; Tully, 2011). Likewise, homophobic name-calling is correlated with decreases in educational outcomes and increases in negative mental health, including depression, anxiety, suicidality, risky behavior including substance abuse, and personal distress (Cochran & Mays, 2000; D'Augelli, Pilkington, & Hershberger, 2002; Elliot & Kilpatrick, 1994; Elze, 2002; Espelage et al., 2008; Hershberger & D'Augelli, 1995; Martin-Storey & Crosnoe, 2014; Poteat & Espelage, 2007; Rivers, 2000, 2004; Woodford et al., 2014).

The mental health outcomes of gendered harassment can be understood as part of a system in which victimization operates to increase personal difficulties and peer-relational problems at the same time that it is influenced by individual's internalizing behaviors and rejection by peers (Hodges & Perry, 1999). In other words, involvement in harassment both contributes to and is fueled by personal distress including internalizing

responses as well as peer-relational difficulties. Adolescents' personal distress, as operationalized by depressive symptoms and increased substance abuse, increases in response to peer victimization, which then in turn can contribute to further increases in victimization. These components of the antecedents and consequences of peer victimization can be understood as mutually reinforcing one another and as contributing to stability of victimization from childhood to adolescence (Hodges & Perry, 1999).

In terms of mental health outcomes and sexual harassment more specifically, cross-sectional research has found that sexual harassment is associated with increased issues with self-esteem, mental and physical health, trauma symptoms, life satisfaction, and substance abuse for middle school girls (Gruber & Fineran, 2007). Additionally, high school girls who were sexually harassed endorsed higher difficulties with mental health, physical health, trauma symptoms, life satisfaction, and substance abuse as compared to girls who were not harassed (Gruber & Fineran, 2007). In a study of peer sexual harassment, peer harassment was found to be significantly associated with increased psychological distress for girls but not for boys (Ormerod et al., 2008).

Another cross-sectional study found that young women in high school fared worse than boys in terms of emotional, behavioral, and educational outcomes of experiencing sexual harassment (Hand & Sanchez, 2000). This study, which was one of very few identified that also examined the effects of perpetration, found that students who perpetrated sexual harassment against their fellow students did not experience any associated increase in negative outcomes (Hand & Sanchez, 2000). An additional study, based on the same nationally representative data set as the aforementioned study, found that girls who experienced sexual harassment were more likely than boys to also

experience increased issues in psychological problems; however, both boys and girls who experienced severe harassment had an increased likelihood of psychological problems, avoidance behaviors, and academic problems (Lee et al., 1996). Another cross-sectional study found that students who experienced "unwanted heterosexual contact" were more likely to endorse depression symptoms than those students who did not (Ross-Durow, 2008). A more recent study found that sexual harassment was significantly associated with self-harm and substance use in both genders, while it was only significantly associated with increases in depressive symptoms among girls (Bucchianeri et al., 2013).

In one of the few longitudinal studies of sexual harassment in adolescence, researchers tracked students from grade 9 to grade 11 and found that for both boys and girls, those who had experienced sexual harassment victimization in grade 9 had increased risk of suicidal thoughts, substance use, and feeling unsafe at school in grade 11 (Chiodo et al., 2009). Girls who were victims of sexual harassment were also at higher risk for developing maladaptive dieting patterns as well as self-harm behaviors (Chiodo et al., 2009). Although the environment and age is different, it is worth noting that sexual harassment has been found to lead to mental health concerns in other settings; a longitudinal study of university workplace sexual harassment found that for women who had been sexually harassed, this harassment increased self-reported assessments of psychological distress two years later (Glomb, Munson, Hulin, Bergman, & Drasgow, 1999). Given the importance of longitudinal analysis for addressing issues of causality, the current study also used a longitudinal design to assess the impact of sexual harassment victimization and perpetration on mental health rather than the cross-sectional design that is so common to the extant literature.

In terms of homophobic harassment, much of the extant literature has also been cross-sectional or retrospective and has focused on the impact that homophobic behaviors have on lesbian, gay, and bisexual individuals. For example, nationally representative research has found increased lifetime prevalence rates of suicidality for gay and bisexual men as compared to their heterosexual counterparts (Cochran & Mays, 2000). Additionally, there is some support for a slight increased risk of recurrent depression for gay men with symptoms beginning during early adolescence, according to retrospective self-report (Cochran & Mays, 2000). These particular findings pertained to men who reported having same-sex sexual partners, and did not include reports of harassment and homophobic teasing in the analysis.

Researchers also found in a cross-sectional study that students in high school who were questioning their sexual orientation and who reported homophobic teasing were more likely to use drugs or alcohol than were their peers who identified as lesbian, gay, or bisexual rather than questioning (Espelage et al., 2008). These questioning students also reported the highest levels of teasing as compared to their lesbian, gay, bisexual, or heterosexual counterparts (Espelage et al., 2008). Despite the increased levels of teasing and negative alcohol and drug outcomes for questioning students, lesbian, gay, and bisexual students also reported increased levels of depression and suicidality as well as alcohol and marijuana use as compared to their heterosexual peers (Espelage et al., 2008). In another cross-sectional study of late adolescent lesbian, gay, and bisexual individuals, victimization due to sexual orientation interacted with family support and self-acceptance to influence mental health outcomes including suicidality and general overall mental health (Hershberger & D'Augelli, 1995).

The effects of homophobic teasing and harassment are potentially long lasting; Rivers found that a small but noteworthy portion of his adult lesbian, gay, and bisexual sample used alcohol or other drugs to help cope with their memories of harassment during their time in school (Rivers, 2004). A retrospective analysis of the long-term correlates of homophobic bullying found that victims of homophobic bullying scored significantly higher on scales of both depression and anxiety when compared to heterosexual students who were not bullied at school as well as lesbians, gay men, and bisexual men and women who were not bullied at school (Rivers, 2011). However, these significant differences disappeared when students who experienced homophobic bullying were compared to those heterosexuals who were bullied more generally at school (Rivers, 2011).

In sum, the extant literature points to the significant association between gendered harassment and long-term negative mental health outcomes, along with negative impacts on educational attainment and physical health. However, few of these studies were longitudinal, so much of the literature is limited in its ability to address issues of the predictive relations and amount of change over time among gendered harassment and mental health. Additionally, much of the literature is focused on the effect of victimization alone, without a consideration of the possible negative impacts of perpetration. Therefore, the current study included a longitudinal analysis of the effects of adolescents' gendered harassment victimization and perpetration on mental health concerns, including depressive symptoms and alcohol and drug use.

Additionally, the extant literature tends to discuss sexual harassment and homophobic teasing and harassment separately, which can be seen as an artificial divide

between related constructs. As described earlier, sexual harassment and homophobic teasing are interrelated constructs in a patriarchal society where heterosexual masculinity is the norm. Gendered harassment as a whole serves to reify the superiority of hegemonic masculinity and to denigrate individuals who do not fit this prescriptive mold. Because of this relatedness, this study examined both sexual harassment and homophobic teasing as two aspects of gendered harassment that have the potential to interact with students' mental health. The current study, therefore, used longitudinal structural equation modeling in order to analyze how change in gendered harassment predicts mental health outcomes of depressive symptoms and alcohol and drug use.

Demographics and Gendered Harassment

Gender

In one of the few longitudinal studies of homophobic name-calling and mental health outcomes, researchers found that homophobic victimization significantly predicted increased anxiety and depression in middle school males and higher levels of withdrawal in females (Poteat & Espelage, 2007). These differential outcomes across gender point to the varying meaning that homophobic teasing has for males and females; the authors posited that homophobic epithets could occur regularly within male peer groups and function in part to establish dominance hierarchies within peer groups (Poteat & Espelage, 2007). For females, on the other hand, being targeted by homophobic teasing could lead to increased feelings of stigmatization and rejection because it is a less normative occurrence in the female-peer social group (Poteat & Espelage, 2007). As reported in the section entitled "Mental Health and Gendered Harassment," gender differences in the association between sexual harassment and mental health have also

been found. Due to this variability in outcomes by gender, the current study considered gender as a moderator in the pathways between gendered harassment and mental health outcomes.

Sexual Orientation

Much of the extant literature on homophobic teasing and harassment has been focused on the experiences and outcomes specifically for lesbian, gay, and bisexual individuals. While it is extremely important to understand the effects that harassment has on this community, there is evidence that homophobic epithets also negatively affect heterosexual students (Birkett, Espelage, & Koenig, 2009; Chiodo et al., 2009; Espelage et al., 2012; Poteat & Espelage, 2007). Therefore, the current study considered students of all sexual orientations and the effects that gendered harassment has on mental health, regardless of sexual orientation.

Gender Inequity and Stereotyping

Given the theoretical grounding of this study in feminist theory and the importance of broader societal ideas about masculinity and femininity on students' experiences of gendered harassment, it is worthwhile to consider student attitudes regarding gender equity and how these can impact gendered harassment. These attitudes are operationalized in the present study with questions that ask students for how much they agree or disagree with statements about the equal treatment of men and women; an example is the statement "In a dating relationship, the boy and girl should have about equal power." The extant literature includes growing evidence that gender inequity attitudes are a risk factor for intimate partner violence specifically (Hindin & Adair, 2002; Pallitto & O'Campo, 2005; Sa & Larsen, 2008). Additionally, researchers found

support for the protective effect of gender equity against female intimate partner violence victimization and male intimate partner violence perpetration (Gomez et al., 2011).

Researchers have also studied gender stereotyping and have used the Gender Stereotyping scale to consider the relation between adolescents' gender stereotyping attitudes and rates of dating violence (Foshee et al., 1998; Foshee & Matthew, 2007). Gender stereotyping in the current study includes students' level of agreement or disagreement with statements that serve to stereotype girls and women as less trustworthy and less deserving of power than men; for example, one item is "Girls are always trying to manipulate boys." One study found that gender stereotyping was a mediator along with destructive communication skills, acceptance of dating abuse, and exposure to family violence between minority status and physical dating violence perpetration (Foshee et al., 2008). Additionally, traditional gender stereotyping was found to be significantly associated with increased physical dating violence perpetration (Foshee et al., 2008).

The literature regarding gender inequity and stereotyping attitudes has thus far been largely used when examining intimate partner violence, as described above. However, these attitudes appear to be theoretically linked to gendered harassment, given that gendered harassment occurs in the context of a patriarchal society. If gendered harassment is a mechanism of sexist and patriarchal mores, then it follows that individual and societal attitudes regarding the trustworthiness and deservingness of females would be related to gendered harassment. Therefore, the current study employed a measure of gender inequity and gender stereotyping at Waves 2 and 3 (Foshee, Linder, MacDougall, & Bangdiwala, 2001). The potential moderating effect of gender equity on the relation between gendered harassment and mental health was analyzed.

Because gender inequity and stereotyping have been found to increase intimate partner violence, and the opposite has been found for gender equity, it is predicted that students who endorse gender equity and non-stereotyped attitudes will have increased rates of mental health concerns if involved in gendered harassment. This proposed pathway is based on the concept of cognitive dissonance; lack of congruence between internal cognitive and external experiential or behavioral realities is related to psychological discomfort (Elliot & Devine, 1994), which it is hypothesized could in turn result in increased mental health concerns.

Longitudinal Associations between Forms of Victimization and Perpetration

Extant literature indicates that there are links between varying forms of gendered harassment perpetration over time (Chiodo et al., 2009; Espelage, Basile, & Hamburger, 2012; Espelage, De La Rue, Anderson, & Low, Under Review a; Espelage, Rose, Colbert, Little, & Rao, Under Review b). For example, girls' bully perpetration has been found to predict sexual harassment perpetration, which in turn predicted sexual teen dating violence in high school (Espelage et al., Under Review a). Likewise, boys' bully perpetration in middle school predicted sexual harassment perpetration and all forms of teen dating violence in high school (Espelage et al., Under Review a). Similarly, researchers found that bullying perpetration in earlier grades was predictive of homophobic name-calling in later grades for both middle school boys and girls (Espelage et al., Under Review b). The literature also demonstrates a connection between various forms of harassment victimization over time. Researchers found that students who were sexually harassed at the beginning of high school were more likely than non-harassed

students to report victimization by peers and dating partners two and a half years later (Chiodo et al., 2009).

Relatedly, research also shows that many students are both victims and perpetrators of gendered harassment and bullying (Rivers & Noret, 2010). A study found that about three quarters of those students who reported being victims of sexual harassment at one time had also been perpetrators of sexual harassment during their time in school; 53% of students reported being both a victim and a perpetrator of sexual harassment (Lee et al., 1996). Additionally, research indicates that student experiences as victims of gendered harassment can lead to later involvement in gendered harassment as perpetrators rather than merely victims. For example, in a Midwestern sample of middle school students, homophobic name-calling victimization was related over time to increased perpetration of homophobic name-calling for both boys and girls (Birkett & Espelage, 2015). Similarly, sexual harassment victimization in grade 9 increased risk for violent delinquency in grade 11, over and above the continuity associated with peer violence more generally (Chiodo et al., 2009).

Bullying research has found similar pathways from victimization to perpetration; peer victimization was found to be related to later increased bullying perpetration rather than perpetration leading to victimization (Barker, Arseneault, Brendgen, Fontaine, & Maughan, 2008; Haltigan & Vaillancourt, 2014). The current study therefore also modeled relations between perpetration and victimization over time, in order to assess whether or not these longitudinal connections between experiencing and enacting gendered harassment existed for this sample. This was examined using two cross-lagged models; one for sexual harassment and one for homophobic name-calling. Paths were

tested in order to determine the directionality of the relation between victimization and perpetration over time.

Additionally, it is important to consider the rate at which students become involved with additional aspects of gendered harassment; for example, if a student is involved in increasingly more and more forms of sexual harassment and homophobic name-calling as both a victim and perpetrator, it is likely that this will be related to increased issues with mental health concerns (Bucchianeri et al., 2013; Espelage & Holt, 2007; Espelage et al., 2012). For example, researchers found that victims of bullying who also experienced high levels of sexual harassment, as well as bully-victims with high levels of dating violence, reported the highest levels of anxiety and depression as compared to other subgroups of students who were uninvolved in bullying or simply bullies (Espelage & Holt, 2007). Similarly, a study of multiple types of harassment and their associations with emotional well-being in adolescents found that increases in the number of different harassment types reported by adolescents was related to elevated risk for alcohol, cigarette, and marijuana use, as well as self-harm (Bucchianeri et al., 2013). Because of the relation between poly-victimization and negative mental health outcomes, the current study analyzed the change in students' experiences of gendered harassment perpetration and victimization over time when modeling the effects of gendered harassment on mental health outcomes using structural equation modeling.

Few longitudinal studies have examined the effects of perpetration in addition to victimization over time on mental health outcomes; this gap in the literature is important to address as the extant literature points to a large group of individuals existing as both victims and perpetrators of gendered harassment. Therefore, the current study analyzed

perpetration as well as victimization in terms of their effects on mental health. Furthermore, there is a relative lack of research on the relation between gendered harassment perpetration and victimization over time; the current study addresses this gap in the literature by evaluating how involvement in gendered harassment perpetration or victimization in earlier years impacts the likelihood of being involved in the opposite in later years.

Summary

The current study addressed the lack of longitudinal research on the effect of gendered harassment on mental health outcomes by using longitudinal structural equation modeling. This analytic approach enabled simultaneous modeling of change in gendered harassment from age 13 to age 17 and change in the mental health outcomes of depression and alcohol and other drug use over the same period. Furthermore, the cross-lagged associations between perpetration and victimization for both sexual harassment and homophobic name-calling over time were analyzed. By investigating sexual harassment and homophobic name-calling perpetration and victimization in the same study, two important aspects of gendered harassment were both addressed, which provides a fuller understanding of the phenomenon of gendered harassment.

Due to the importance of gender in the experience of gendered harassment, separate but simultaneous analyses for girls and boys were modeled using multi-group analysis so that comparisons across gender could be made. In addition, the effects of gender inequity and stereotyping attitudes on gendered harassment were examined. Including student attitudes of gender inequity and stereotyping allowed for a more

nuanced look at the relation among student experiences of gendered harassment, attitudes about gender, and mental health outcomes.

Research Questions and Hypotheses

The analyses outlined above are described below in terms of research questions and related hypotheses. Specific analytic models are described in Chapter 3: Method.

1. To what extent do changes in gendered harassment perpetration predict changes in mental health outcomes?

This question was addressed with one model for sexual harassment perpetration and one for homophobic name-calling perpetration (see Figure 1). It was predicted that increases in gendered harassment perpetration from age 13 to 17 would be significantly associated with increases in both depressive symptoms and alcohol and other drug use, but that these associations would be minimal, given the limited findings in the extant literature that perpetration does not have negative impacts on individual perpetrator's mental health.

2. To what extent do changes in gendered harassment victimization predict changes in mental health outcomes?

This question was analyzed in the same manner as the previous question. Gendered harassment was expected to be predictive of increased depressive symptoms and alcohol and other drug use from age 13 to 17, given the robust cross-sectional findings and minimal longitudinal results in the extant literature that indicate that gendered harassment victimization is associated with many negative outcomes including mental health.

3. For questions 1 and 2, do the effects of gendered harassment on mental health outcomes differ by gender?

Gender was included as a control in the previous models to account for its potential effects on gendered harassment and both outcomes; subsequently, gender was tested as a moderator for each of the previous four models described. It was hypothesized that gender would be a significant moderator and that the relation between gendered harassment and negative mental health outcomes would be stronger for females than males, given the findings in cross-sectional literature that females have more negative outcomes from gendered harassment than males. This relation was expected to hold for both victimization and perpetration, although the extant literature has little to report for perpetration. Given that perpetration is seen as less socially and culturally normative for females (Lei, Simons, Simons, & Edmond, 2014), it was hypothesized that females would experience increased mental distress from engaging in these behaviors.

4. For questions 1 and 2, do gender inequity and gender stereotyping attitudes predict gendered harassment? If so, do they moderate the pathway between gendered harassment and mental health?

Gender inequity and gender stereotyping attitudes were included as predictors in the models for questions 1 and 2 to account for their potential effects on gendered harassment. Then, gender attitudes were tested as moderators for each of the previous four models described. A similar process to that employed for question 3 was used to test for moderation by gender attitudes. It was hypothesized that both gender inequity and gender stereotyping would emerge as a moderator of the relation between gendered harassment and mental health outcomes. More specifically, it was hypothesized that

students with higher gender equity attitudes (that is, lower gender inequity and stereotyping) who were also victimized or perpetrators would have increased negative mental health outcomes than those victims who have lower gender equity, due to the cognitive dissonance between their attitudes and the reality they are faced with. In other words, students who were involved in gendered harassment as perpetrators or victims who also have increased gender inequity and stereotyping attitudes would fare better than those involved students who have lower gender inequity and stereotyping beliefs.

5. To what extent does gendered harassment victimization predict gendered harassment perpetration (and/or vice versa – perpetration predicting victimization)?

Two cross-lagged models (see Figure 2) were created to address this question; one for sexual harassment and one for homophobic name-calling. It was predicted, given the findings in the extant literature, that victimization at age 13 would be associated with increased involvement in perpetration at age 16 and 17.

CHAPTER 3

METHOD

This chapter describes the characteristics of participants. Secondly, study procedures are explained. Next, the measures are described, including their psychometric properties. Finally, a data analysis plan is described along with the proposed models for the analysis.

Participants

This study was conducted with 3,549 students from four Midwestern middle schools who were part of the University of Illinois Study of Bullying and Sexual Violence funded by the Centers for Disease Control. These students were then followed into three high schools through National Institute of Justice funding for the University of Illinois Study of Bullying, Sexual, and Dating Violence Trajectories from Early to Late Adolescence. Students were included in the analyses as long as they completed a minimum of one wave of survey data. The sample was 50.4% female, 49% African American, 34% white, 6% Hispanic, and 2% Asian (see Table 1). In the first wave of data used in the current study, 42% of the participants were 13 years old with an almost even split between 7th and 8th grade. In the second wave, the mean age was 15.8 years with a third of students in 9th, a third in 10th, and a third in 11th grade. In the third and final wave of data, the mean age was 16.8 years old with the majority of students between 16 and 18 years old and in 10th through 12th grade. See Table 1 below for more information.

Procedures

Consent/assent procedures

The institutional review board and school district administration approved a waiver of active parental consent. Subsequently, parents of all students enrolled in the schools were sent letters informing them about the purpose of the study. Later, parent information letters were sent to all student homes in the participating schools with an option for the parents to withdraw their child from the study. Parents were asked to sign the form and return it only if they were unwilling to have their child or children participate in the investigation. Additionally, a number of meetings were held to inform parents of the study in each community. In the spring of 2008, investigators attended Parent-Teacher conference meetings as well as staff meetings, and the study was announced in emails from the principals and school newsletters. At the beginning of each survey administration, teachers removed students from the room if their parents had not consented for them to participate, and researchers also reminded students that they should not complete the survey if their parents had returned the form. Students were asked to consent to participate in the study through an assent procedure included on the coversheet of the survey. Students were told that their survey responses would remain confidential and their identifying information would be removed from the questionnaires before the data were entered. A 95% participation rate was achieved.

Survey administration

Students completed surveys in Fall 2009 (Wave 1), Spring 2012 (Wave 2), and Spring 2013 (Wave 3). Six trained research assistants, the primary investigator, and a faculty member collected data. At least two of these individuals were present to

administer surveys jointly to classes that ranged in size from 10 to 25 students. Researchers informed students about the general nature of the survey. Then, the researchers ensured that students were sitting far enough apart in order to reinforce the confidentiality of each student as they completed the survey. Students were given survey packets and the survey was read aloud to middle school students. High school students read the survey on their own and asked questions when necessary for their own comprehension. It took students on average 40 minutes to complete the survey.

Measures

Every participant completed surveys at each wave that included questions about exposure to family violence, history of abuse (sexual and physical), bullying, sexual harassment, homophobic teasing, and teen dating violence perpetration and victimization (Waves 2 and 3 only), along with questions regarding attitudes about gender, experiences of depression, and alcohol and drug use.

Demographic Variables

Demographic information was collected, including gender, age, grade, and race/ethnicity. For race, participants were given five options: African American (not Hispanic), Asian, White (not Hispanic), Hispanic, and other (with a space to write in the most appropriate racial descriptor). Race was dummy coded into a set of dichotomous variables.

Homophobic Name-Calling Perpetration and Victimization

The 10-item Homophobic Content Agent Target Scale was used to assess homophobic teasing perpetration and victimization in Waves 1, 2, and 3 (Poteat & Espelage, 2007). Students were asked how often in the past 30 days they directed

homophobic epithets at other students (perpetration) or were targets of this language (victimization). For the five-item perpetration scale, students were asked, "how many times in the last 30 days did YOU say [homo, gay, lesbo, or fag] to" various categories of peers for each item. The first item asked about their name-calling towards friends, while other items asked about using these words with someone they did not know well, someone they did not like, someone they thought was gay or lesbian, and someone they did not think was gay or lesbian. Response options included "Never," "1 or 2 times," "3 or 4 times," 5 or 6 times," and "7 or more times." The five-item victimization scale consisted of the same items and response options, except that students were asked how often others called them homophobic epithets. Construct validity has been supported through exploratory and confirmatory analyses and the victimization scale correlates significantly with measures of bullying victimization (Poteat & Espelage, 2005, 2007). Cronbach's alpha coefficients were: .82 for Wave 1 victimization, .73 for Wave 2 victimization, .82 for Wave 3 victimization, .86 for Wave 1 perpetration, .79 for Wave 2 perpetration, and .81 for Wave 3 perpetration.

Wave 1 Sexual Harassment Perpetration and Victimization

The American Association of University Women [AAUW] Sexual Harassment Survey (AAUW, 2001) was used to measure the frequency with which students experienced and perpetrated sexually harassing behaviors within the last year in Wave 1 of the data collection. Thirteen items assessed perpetration, while thirteen parallel items asked about victimization. The behaviors measured range from non-physical behaviors including making sexual jokes or comments to more intrusive physical behaviors such as forcing another student to do something sexual against their will. Response options

include "Not Sure," "Never," "Rarely," "Occasionally," and "Often." Scores are summed and higher scores indicate higher frequency of experience or perpetration of sexual harassment. In one longitudinal study, Cronbach's alpha ranged from .68 to .75 for victimization and from .67 through .72 for perpetration (Taylor & Stein, 2007). Scores on the scale have correlated with scores of other forms of aggression, including the Bullying Scale (r = .56) and the Childhood Trauma Questionnaire (r = .51), providing support for concurrent validity (Espelage & Holt, 2001).

In the current study, the response options "not sure" and "never" were collapsed, which provided the added benefit of creating more consistent scaling across waves. In order to create an equivalent scale across waves, the six overlapping items used in both the Wave 1 scale and in the Wave 2 and 3 scale were used. Alpha coefficients for the current study were: .80 for victimization with all original 13 items, .70 for victimization with 6 overlapping items, .76 for perpetration with all original 13 items, and .62 for perpetration with the 6 overlapping items. This decrease in reliability is understandable given the decrease in items as well as the developmental period of this age group; in middle school overt sexual harassment behaviors are generally less common than in high school and students' less frequent and consistent responses are reflected in the decreased reliability when scale items are taken away. Given the importance of modeling change over time, the reduced item version was used in order to create consistency across time in measurement.

Waves 2 and 3 Sexual Harassment Perpetration and Victimization

A modified version of the AAUW Sexual Harassment Survey was used to assess for sexual harassment perpetration and victimization in Waves 2 and 3 (Espelage et al.,

2012). For perpetration, participants were presented with six items to assess unwanted verbal sexual harassment (including sexual comments, sexual rumor spreading, and showing sexual pictures), and forced sexual contact (e.g. touching in a sexual way, physically intimidating in a sexual way, forcing to do something sexual). Students were asked to consider how often in the current school year they had done each of these acts to other students at school, and response options were "Never," "1 or 2 times," "3 or 4 times," "5 or 6 times," and "7 or more times." The victimization scale asked about the same behaviors with the same response options, but instead asked students how often during the school year other students had done each act to them. The final two response options were collapsed in the current study in order to create more consistent scaling across waves. In order to create an equivalent scale across waves, the six overlapping items used in both the Wave 1 scale and in this scale were used. Alpha coefficients for both scales were: .70 for Wave 2 victimization, .76 for Wave 3 victimization, .69 for Wave 2 perpetration, and .80 for Wave 3 perpetration.

Depression

An eight-item version of the Orpinas Modified Depression Scale was used in the survey to assess depressive symptoms (Orpinas, 1993). Students were asked about sadness, irritability, worrying, nervousness, and hopelessness. Participants were asked how often in the last thirty days they had encountered these issues, and response options were "Never," "Sometimes," "Often," and "Almost Always." Higher scores indicate more depressive symptoms. One item was reverse scored so that it was also scaled in such a way that higher scores indicated more depressive symptoms. Wave 1 included an additional response option of "Not often." Because the response scale in Wave 1 differed

from the response scales in Waves 2 and 3, the five-point scale was rescaled into a four-point scale by combining the response options "not often" and "sometimes." The scale has demonstrated good internal consistency; with an alpha coefficient of .74 when administered to adolescents aged 10 to 18 (Orpinas, 1993). Waves 1 and 2 included an item that was not used in Wave 3 ("Did you feel like not eating or eating more than usual?"), so this item was removed from all waves to make the scales consistent across waves. Items asking about sleep, concentration, and happiness all failed to load significantly for multiple waves; due to this failure to add to the measurement model significantly, these three items were also removed. Alpha coefficients for the current study were calculated both before and after the items were removed to ensure that removing the items did not lessen the scale's reliability. Alpha coefficients were: .79 for Wave 1 with nine items, which improved to .84 for the five-item version; .84 for Wave 2 with all nine items and again improved to .85 for the five-item version; .69 for the eight items in Wave 3 with an increase in reliability to .90 when using the five-item version.

Wave 1 Drug and Alcohol Use

An eight-item scale asked students to report how many times in the past year they used alcohol or drugs (Farrell, Kung, White, & Valois, 2000). The scale included statements like "drunk beer," "smoked cigarettes," "drunk liquor," and "used marijuana." Response options were "Never," "1 or 2 times," "3 to 5 times," "6 to 9 times," and "10 or more times." The scale correlates positively with risk behaviors like delinquency and correlates negatively with positives behaviors including school attendance (Farrell et al., 2000). Farrell et al. (2000) reported a Cronbach's alpha of .88 with a sample of rural adolescents and of .87 with a sample of urban adolescents. The final two items ("used

inhalants" and "used other drugs") were not used in the analysis due to very low endorsement of these behaviors, which was not surprising given that these items were not as developmentally appropriate for this age group. The alpha coefficients for the current study were calculated both with and without these final items; Cronbach's alpha was .83 for the eight-item scale, and improved to .86 for the six-item scale.

Wave 2 and 3 Drug and Alcohol Use

A six-item scale asked students to report how many days out of the past 30 various substances were used (D'Amico et al., 2012). The scale asked about use of cigarettes, smokeless tobacco, alcohol and alcohol binging, marijuana, and other illegal drugs. Response options included "0 days, "1 day," "2 days," "3-5 days," "6-9 days," "10-19 days," and "20-30 days." Cronbach's alpha for the current study was .74 for Wave 2 and .78 for Wave 3.

Wave 2 and 3 Gender Inequity and Stereotyping

The Gender Stereotyping scale assessed students' gender equity attitudes (Foshee et al., 2001). An eleven-item scale asked students how strongly they agreed or disagreed with statements about how boys and girls should be treated. Items included "Most girls/women can't be trusted," "In a dating relationship, the boy and girl should have about equal power," "It is more important for boys than girls to do well in school," and "If both husband and wife have jobs, the husband should do a share of the housework, such as washing dishes and doing the laundry." Response options were "Strongly disagree," "Disagree somewhat," "Agree Somewhat," and "Strongly Agree." Items that were phrased to be in support of gender equity (four items in total) were reverse scored so

that the higher the number, the more traditional the gender stereotypes. A study of the reliability of the scale found a Cronbach's alpha of .67 (Foshee et al., 2001).

Exploratory factor analysis was performed in the current study in order to better understand the psychometric properties, including number of factors, of this scale. Two factors were found, one with seven items that represented gender stereotyping, and one with four items (all reverse scored), representing gender inequity statements. Alpha coefficients for the current study were .67 for Wave 2 with all 11 items, .72 for the seven-item stereotyping factor, and .77 for the four-item inequity factor; for Wave 3 they were .60 for the 11-item version, .81 for the stereotyping factor, and .90 for the inequity factor. This scale was used as a moderator. In order to facilitate its use as a moderator, the correlation between the two time points was considered, and as the two were highly correlated (.624 at the total scale level, with significance at the .01 level) the gender equity scale from Wave 3 was used for the analysis.

Data Analysis

Missing Data

In order to address concerns with missing data, full information maximum likelihood (FIML), the default in MPlus, was used to ensure unbiased parameter estimates. This allowed for valid inferences from the statistical analyses. FIML results in similar information and outcomes as multiple imputation procedures and is a robust mechanism to manage missing data (Collins, Shafer, & Kam, 2001).

Descriptive Statistics

Descriptive analyses, including means and standard deviations, of study variables for Waves 1, 2, and 3 were calculated for the entire sample as well as separately by

gender. Correlations among sexual harassment and homophobic teasing were calculated for the whole sample and separately by gender as well, in order to provide evidence for the overlap between forms of gendered harassment and the correspondence between experiences of gendered harassment perpetration and victimization. Descriptive statistics were obtained using SPSS Version 22.0.

Measurement Models Across Waves

Scales were treated continuously in order to preserve the richness of the data. Researchers recommend that scale items with five or more responses can be treated continuously (Hox & Stoel, 2005). Skewness was estimated in order to confirm that the responses on various scales were normally distributed or relatively normally distributed; skewness ranged from .43 to 4.80 with the highest skewness in the sexual harassment perpetration scales. SPSS Version 22.0 was used to calculate the distribution of responses.

Growth Modeling

Growth modeling was initially attempted; however, due to insufficient variability and growth in harassment behaviors over time, this form of modeling was not successful for any of the forms of gendered harassment.

Longitudinal Structural Equation Modeling (SEM)

Subsequently, longitudinal SEM was performed in order to address the following research questions as described.

1. To what extent do changes in gendered harassment perpetration predict changes in mental health outcomes?

One model was fit for sexual harassment perpetration, and one for homophobic name-calling perpetration. Gendered harassment behaviors were modeled separately in order to better understand the specific effects of these behaviors on students' mental health over time. The main effects model included correlations at the item level in the measurement models and correlations between the outcomes at each wave. First, a model was fit with Wave 3 regressed on Wave 2 and Wave 2 regressed on Wave 1, which created two auto-regressive difference scores. The pathways of primary interest were those from Wave 3 gendered harassment to Wave 3 mental health outcomes, or in other words from differences in harassment to differences in mental health outcomes. The effects of race and gender on harassment, depression, and substance abuse at each wave were included. Model fit statistics for these models were low and stability between gendered harassment at Waves 2 and 3 was very high at .86 and .95 respectively, which suggested little change across these waves.

Thus, another set of models was fit that included only Waves 1 and 3 (see Figure 1). Wave 3 was regressed on Wave 1, creating an auto-regressive difference score between Wave 3 and Wave 1. The pathways of interest were again those from Wave 3 gendered harassment to Wave 3 mental health outcomes. Again, effects of race and gender on harassment and mental health outcomes at both waves were included. This model had significantly improved fit and allowed for inspection of the effect of change in gendered harassment from Wave 1 to Wave 3 and analyses proceeded with this model.

2. To what extent do changes in gendered harassment victimization predict changes in mental health outcomes?

The analyses were the same as described in the first research question, except with gendered harassment victimization replacing gendered harassment perpetration in each model. Again, one model for sexual harassment victimization was created as well as one for homophobic name-calling victimization.

3. For questions 1 and 2, do the effects differ by gender?

The models described above were estimated simultaneously for males and females using multi-group analysis. The measurement models for gendered harassment and mental health were fixed to be equal across gender groups while the parameters of interest were freely estimated for each group; in other words, the models were refit using multi-group analysis. Had there been evidence of moderation, pathways would be systematically fixed and freed in order to determine where those differences by gender exist. Because the models were estimated simultaneously, using the same covariance matrix, the coefficients for each model could be compared across genders.

4. For questions 1 and 2, do gender inequity and gender stereotyping attitudes predict gendered harassment? If so, do they moderate the pathway between gendered harassment and mental health?

Before testing moderation, main effects models with gender attitudes as predictors were tested to confirm that gender attitudes were significantly related to the latent variables. Again, effects of race and gender on harassment and mental health outcomes at both waves were included. Next, moderation was tested once again using multi-group analysis. For each of the four models used in questions 1 and 2, two new models were created; one with the gender inequity attitude factor as a moderator and one with the gender stereotyping attitudes as the moderator. Given significant moderation in either or

both of these models, the pathways in questions 1 and 2 could be understood to differ by gender equity attitudes.

5. To what extent does gendered harassment victimization predict gendered harassment perpetration (and/or vice versa – perpetration predicting victimization)?

This question is addressing whether engagement in one behavior (perpetration or victimization) predicts engagement in the opposite, as well as whether one of these paths is stronger than the other. Two models were created: one for sexual harassment and one for homophobic perpetration. Both included race and gender as controls at Wave 3 and within time correlations between victimization and perpetration at each wave. The models (see Figure 2) were fit in three steps; first by looking at the paths from victimization to perpetration, then the paths from perpetration to victimization, and finally at the bi-directional paths.

CHAPTER 4

RESULTS

This chapter includes the results of the preliminary data analysis, including descriptive statistics and correlations between constructs. Next, the measurement models are described and the longitudinal structural equation modeling (SEM) findings are reported and the final models are shown.

Preliminary Data Analyses

Means

In order to first assess change in various constructs over time as well as the differences in these constructs by gender, the means and standard deviations for each variable of interest were calculated both by gender and for the whole sample (see Table 2 at end of document). Higher numbers indicate higher levels of mental health concerns, harassment, and gender inequity and gender stereotyping. Alcohol and other drug use increased on average over time, as did endorsement of depressive symptoms. On average, females reported higher levels of depressive symptoms than their male counterparts, while males endorsed more substance use than did females.

Homophobic name-calling victimization means stayed virtually stable across waves (1.36 at Wave 1 or age 13, 1.35 at Wave 2 or age 16, and 1.39 at Wave 3 or age 17), and endorsement of homophobic perpetration decreased over time (1.73 at Wave 1, 1.57 at Wave 2, and 1.53 at Wave 3). For both victimization and perpetration, males on average reported higher involvement than females. Sexual harassment in terms of both victimization and perpetration increased from middle school (Wave 1) to high school (Wave 2), but then stabilized while in high school (Wave 3). More specifically, the

sexual harassment victimization mean was 1.20 at Wave 1, 1.40 at Wave 2, and 1.35 at Wave 3, and perpetration moved from 1.06 at Wave 1 to 1.13 at Wave 2 and stayed at 1.13 for Wave 3. Females endorsed more victimization on average in each wave than did males, while perpetration was virtually the same across gender at Wave 1 with higher means reported for males than females in Waves 2 and 3.

Gender inequity attitudes increased from an average of 1.63 at Wave 2 to 1.95 at Wave 3, while gender-stereotyping attitudes decreased from 1.93 at Wave 2 to 1.75 at Wave 3. Females on average scored lower (i.e. less inequity and less stereotyped attitudes) than males for both attitudinal measures and at both waves.

Correlations

Next, correlations between sexual harassment perpetration and victimization as well as homophobic teasing perpetration and victimization were calculated for the total sample (Table 3), for females (Table 4) and for males (Table 5). These calculations indicated high levels of correlation across forms of gendered harassment. Of special interest were the correlations between homophobic name-calling perpetration and victimization across waves; perpetration at Wave 1, 2, and 3 and victimization at each wave were all positively correlated significantly with each other across waves for the total sample. Correlations ranged from .24 for homophobic perpetration at Wave 1 with homophobic victimization at Wave 2 as well as homophobic victimization at Wave 1 with victimization at Wave 3 to .58 for homophobic perpetration at Wave 3 with homophobic victimization at Wave 3.

A similar pattern emerged with sexual harassment, in that most waves were significantly correlated with other waves for both perpetration and victimization.

Correlations ranged from .12 for sexual harassment victimization at Wave 1 with the same at Wave 2 to .57 for harassment perpetration and victimization both at Wave 3. The exceptions were that sexual harassment victimization at Wave 1 was not significantly correlated with perpetration at Wave 2 or 3 and perpetration at Wave 1 was not correlated significantly with victimization or perpetration at Wave 3.

Longitudinal Structural Equation Modeling (SEM)

Measurement Models

The first step of creating a longitudinal SEM, as outlined by Farrell (1994), is to evaluate the overall measurement model. This was performed in MPlus with each measure (i.e. sexual harassment perpetration and victimization, homophobic name-calling perpetration and victimization, depression, alcohol and other drug use, gender inequity attitudes, and gender stereotyping attitudes) at each wave. Each of the final measurement models, including standardized and unstandardized factor loadings at the item level as well as model fit statistics, are reported in Table 6 (see end of document). The first item of each measure was fixed to 1.00 to provide the scaling factor. Each item had factor loadings with significance at $p < .01$ or $p < .001$, factor loadings within scales tended to be similar, and fit statistics for each model were relatively good; these findings indicated that the items generated a single underlying construct for each measure. Allowing each variable to be treated as a latent construct allowed the weight of each variable to be different as appropriate rather than treating their weights as equal as would have been done with a composite.

For the alcohol and other drug items, the six standardized factor loadings ranged from .57 on Item 3 (cigarettes) to .89 on Item 5 (liquor) for Wave 1 of alcohol and other

drug use, from .23 on Item 2 (smokeless tobacco) to .87 on Item 3 (one full drink of alcohol) for Wave 2, and from .44 on Item 2 (smokeless tobacco) to .91 on Items 3 (one full drink of alcohol) and 4 (five or more drinks of alcohol) in Wave 3. For the depression measures, the five standardized factor loadings for depression ranged from .65 on Item 2 (grouchy or irritable) to .75 on Item 5 (nervous things wouldn't work out) for Wave 1, from .70 on Item 2 (grouchy or irritable) to .79 on Item 1 (sad) in Wave 2, and from .74 on Item 4 (hopeless about the future) to .84 on Item 1 (sad) in Wave 3.

The depression measure was the only scale that required deletion of items because they did not contribute significantly to the model and in fact loaded in an unexpected direction. The reverse scored item as well as those that addressed biological processes related to depression (i.e., sleeping, concentration) did not load significantly with those items that were related to mood (i.e., sadness, irritability, worry, and hopelessness). Those items that were not significant were removed and model fit subsequently improved (χ^2 = 20.12, RMSEA = .12, CFI = .95, TLI = .93).

For the sexual harassment victimization items, the six standardized factor loadings ranged from .22 on Item 6 (forced to do something sexual) to .72 on Item 4 (touched in an unwelcome sexual way) in Wave 1, from .39 on Item 6 (forced to do something sexual) to .70 on Item 4 (touched in an unwelcome sexual way) in Wave 2, and from .50 on Item 1 (made unwelcome sexual comments, jokes, or gestures) to .76 on Item 5 (showed sexy or sexual pictures that you did not want to see) in Wave 3. In terms of sexual harassment perpetration items, the six standardized factor loadings ranged from .20 on Item 6 (forced to do something sexual) to .65 on Item 4 (touched in an unwelcome sexual way) in Wave 1, from .47 on Item 1 (made unwelcome sexual comments, jokes, or

gestures) to .74 on Item 5 (physically intimidated in a sexual way) in Wave 2, and from .43 on Item 1 (made unwelcome sexual comments, jokes, or gestures) to .85 on Item 5 (physically intimidated in a sexual way) in Wave 3.

For the homophobic name-calling victimization items, the five standardized factor loadings varied from .49 on Item 1 (called by a friend) to .79 on Item 2 (called by someone you didn't know) in Wave 1, from .36 on Item 1 (called by a friend) to .85 on Item 2 in Wave 2 (called by someone you didn't know), and from .43 on Item 1 (called by a friend) to .90 on Item 2 (called by someone you didn't know) in Wave 3. For the homophobic name-calling perpetration measure, the five standardized factor loadings were from .62 on Item 5 (called someone you did not think was gay or lesbian) to .82 on Item 3 (called someone you did not like) in Wave 1, from .49 on Item 1 (called a friend) to .84 on Item 2 (called someone you didn't know) in Wave 2, and from .55 on Item 1 (called a friend) to .84 on Item 2 (called someone you didn't know) in Wave 3.

In terms of gender inequity attitudes, the four standardized factor loadings oscillated from .55 on the reverse-scored Item 2 (it is all right for a girl to ask a boy out on a date) to .77 on reverse-scored Item 4 (girls should have the same freedom as boys) in Wave 2 and from .79 on reverse-scored Item 2 (it is all right for a girl to ask a boy out on a date) to .86 on reverse-scored Items 3 (if both the husband and wife have jobs, the husband should do a share of the housework) and 4 (girls should have the same freedom as boys) in Wave 3. Finally, for gender stereotyped attitudes, the seven standardized factor loadings ranged from .30 on Item 5 (on a date, the boy should be expected to pay for everything) to .70 on Item 2 (in a dating relationship the boy should be smarter than the girl) in Wave 2 and from .48 on Item 5 (on a date, the boy should be expected to pay

for everything) to .75 on Item 2 (in a dating relationship the boy should be smarter than the girl) in Wave 3.

Main Effect Models of Changes in Gendered Harassment Predicting Changes in Mental Health Outcomes

After creating the measurement models and inspecting model fit statistics, the next step was to address the first and second research questions (to what extent do changes in gendered harassment perpetration/victimization predict changes in mental health outcomes?). Figures 3 through 6, below, are the main effects models and include controls for race and gender on harassment and mental health outcomes at Wave 3. Fit indices for each model are included with the figure, and in combination suggest satisfactory fit to the data.

Changes in each aspect of gendered harassment from Wave 1 (age 13) to Wave 3 (age 17) significantly predicted changes in substance use and depression symptoms from age 13 to 17. Specifically, for sexual harassment perpetration, for every one-unit positive difference in perpetration, there was an associated positive difference of .28 units of alcohol and other drug use and .08 units of depressive symptoms. For sexual harassment victimization, a standardized coefficient of .28 represents the relation between victimization and substance use, while .23 is the standardized coefficient for the path from victimization to depression. In terms of the homophobic name-calling perpetration, a path coefficient of .28 from perpetration to alcohol and other drug use and of .16 from perpetration to depression was found. Similarly, for homophobic name-calling victimization, path coefficients of .21 for substance use and .16 for depressive symptoms

indicate that positive differences in victimization predicted positive differences in mental health outcomes.

Testing Moderation by Gender

To address research question 3 (for questions 1 and 2, do effects differ by gender?), moderation by gender was tested. When moderation was included, the subsequent decrease in model fit suggested moderation did not exist. Then, despite some differences in the parameters, statistical tests of equivalence revealed that the values were functionally equivalent across gender. It should be noted that for the model that tested the effects of sexual harassment perpetration on mental health outcomes, moderation could not be tested because there was no variability in one of the items for one of the groups. More specifically, the multi-group analysis could not be fit because for one item for females at Wave 1 there was a standard deviation of 0. In other words, no females at Wave 1 reported that they had forced someone else to do something sexual.

Gender Inequity and Gender Stereotyping Attitudes

The next step was to address research question 4 (For questions 1 and 2, do gender inequity and gender stereotyping attitudes predict gendered harassment? If so, do they moderate the pathway between gendered harassment and mental health?). Main effects models that included these attitudes as predictors were fit in order to better understand the impact of these attitudes on the relation between gendered harassment and mental health outcomes. Figures 7 through 14 (at the end of the document) include the parameter estimates given the inclusion of gender inequity as a predictor and separately given the inclusion of gender stereotyping as a predictor. All models include controls for race and gender on harassment and mental health outcomes at Wave 3.

Gender inequity attitudes loaded significantly in two of the models: the pathway from gender inequity to sexual harassment perpetration at Wave 3 was significant ($\beta = .12$, $p < .001$) and the pathway from inequity to homophobic victimization at Wave 3 was also significant ($\beta = .11$, $p < .01$). Gender stereotyping attitudes loaded significantly in three models: stereotyping to sexual harassment perpetration at Wave 3 ($\beta = .12$, $p < .01$), stereotyping to sexual harassment victimization at Wave 3 ($\beta = .18$, $p < .001$), and stereotyping to homophobic perpetration at Wave 3 ($\beta = .36$, $p < .001$). Finally, moderation by these two attitudes was tested using multi-group analysis. These models would not load and were unable to be analyzed.

Cross-lagged Harassment Models

To address research question 5 (to what extent does gendered harassment victimization predict gendered harassment perpetration or vice versa?), cross-lagged models were fit. One model was fit for sexual harassment, and one for homophobic name-calling. Types of gendered harassment were fit separately in order to better understand the effect of each form of harassment perpetration and victimization over time. Race and gender were included as controls on harassment perpetration and victimization at Wave 3 in both models. The first step of model fitting was to assess the pathways from victimization to perpetration, then to assess the opposite pathways from perpetration to victimization, and finally to look at the bidirectional paths. The stability coefficients (i.e. from Wave 1 to Wave 2 and Wave 2 to Wave 3) for perpetration and victimization as well as the within-wave bivariate relationship between perpetration and victimization were included in all models. The bidirectional models are presented here (see Figures 15 and 16).

In terms of the cross-lagged model of sexual harassment (Figure 15), significant stability coefficients emerged from victimization at Wave 1 to victimization at Wave 2 ($\beta = .27$, $p < .01$), as well as from victimization at Wave 2 to victimization at Wave 3 ($\beta = .75$, $p < .001$). The stability coefficient from Wave 1 perpetration to Wave 2 perpetration was also statistically significant ($\beta = .65$, $p < .001$). Significant pathways from Wave 1 victimization to Wave 2 perpetration ($\beta = -.28$, $p < .01$) and from Wave 2 victimization to Wave 3 perpetration ($\beta = .25$, $p < .001$) were found. The pathway from Wave 1 perpetration to Wave 2 victimization was not statistically significant, while the pathway from Wave 2 perpetration to Wave 3 victimization was significant ($\beta = -.25$, $p < .001$). When the model was fit with unidirectional pathways (that is, with victimization to perpetration only and with perpetration to victimization only), one additional significant pathway emerged. Specifically, the stability coefficient from perpetration at Wave 2 to perpetration at Wave 3 was significant for these models.

For the cross-lagged model of homophobic name-calling (Figure 16), significant stability coefficients emerged from victimization at Wave 1 to victimization at Wave 2 ($\beta = .34$, $p < .01$) and from victimization at Wave 2 to victimization at Wave 3 ($\beta = .47$, $p < .001$). Similarly, significant stability coefficients were found from homophobic perpetration at Wave 1 to perpetration at Wave 2 ($\beta = .62$, $p < .001$) and from perpetration at Wave 2 to perpetration at Wave 3 ($\beta = .71$, $p < .001$). No significant effects were found between victimization and perpetration or vice versa. When the model was fit with unidirectional pathways (that is, with victimization to perpetration only and with perpetration to victimization only), no additional significant pathways emerged.

CHAPTER 5

DISCUSSION

These results support findings in the extant literature that students do indeed experience sexual harassment and homophobic name-calling, and that these experiences are associated with negative mental health outcomes (Chiodo et al., 2009; Espelage et al., 2008; Espelage et al., 2012; Gruber & Fineran, 2007). Adolescents, regardless of gender, endorsed involvement in both perpetration and victimization of sexual harassment and homophobic name-calling; however, males on average reported more homophobic name-calling perpetration and victimization than their female counterparts. This finding is consistent with an understanding of homophobic name-calling as a means of performing masculinity, in that for males using homophobic teasing can be a way to indicate to others that they are straight and not part of the group that they are denigrating. In terms of sexual harassment, females reported higher levels of victimization and slightly lower amounts of perpetration than did males. Again, given the grounding of this study in feminist theory, these different involvement rates make sense given that sexual harassment, as enacted by males against females, is a form of reinforcing the dominance of masculinity and maleness and subordinate femininity and femaleness. In other words, when boys engage in sexual harassment against females, it can potentially indicate to their peers that they are appropriately masculine, whereas a girl engaging in sexual harassment does not necessarily reinforce her femininity.

For all students, their likelihood of experiencing depressive symptoms and substance use at age 17 increased if they were involved in any form of gendered harassment from age 13 to age 17. This relation existed across perpetration and

victimization as well as for both homophobic name-calling and sexual harassment involvement. This consistently predictive relation between increases in gendered harassment and increases in negative mental health outcomes is important in that it indicates that harassment has negative effects for all involved, regardless of gender and regardless of involvement as a victim or a perpetrator. It extends findings in the cross-sectional literature and limited longitudinal findings that document a connection between harassment victimization and negative outcomes for victims and females (Goldstein, Malanchuk, Davis-Kean, & Eccles, 2007) and reinforces the detrimental impact of these behaviors more broadly for perpetrators in addition to victims, and for males in addition to females.

Given the paucity of literature related to the outcomes for adolescent perpetrators of harassment, the finding that both sexual harassment and homophobic name-calling perpetration is associated with increased depressive symptoms and substance use is especially worth highlighting. These results point to the negative effect of performing these acts, which makes sense given that harassment is a means of devaluing and undermining the value of individual autonomy and respect. Whether or not students consciously understand harassment as a devaluation of their peers' and subsequently their own worth, the associated decreased mental health indicates that harassment does indeed serve to diminish students' well-being and positive sense of self.

In addition, these results reinforce that gendered harassment has negative effects over long periods of time, as increases in harassment from age 13 to 17 impacted mental health outcomes over the same time-span. Given the long-term implications of harassment on individuals' mental health, the high stakes of prevention and intervention

efforts in middle school is highlighted. Increasing prevention efforts in early middle school could have far-reaching effects on students' well-being, including bolstering protective factors against depression and substance abuse. These results reinforce the necessity of schools' compliance with Title IX, given the direct mental health implications for students who are involved in sexual harassment and homophobic name-calling.

In terms of gender inequity and stereotyping attitudes, the findings suggest a relation between involvement in gendered harassment and these attitudes. Students who endorsed gender inequity attitudes were more likely to be involved in sexual harassment perpetration and homophobic victimization. For individuals with stereotyped attitudes regarding gender, involvement in sexual harassment perpetration and victimization as well as homophobic perpetration was more likely. This finding is consistent with the extant literature on the relation between gender-stereotyped attitudes and dating violence perpetration (Foshee et al., 2008). The significant associations present in the current study extend the previous findings regarding stereotyping and perpetration to the significance of stereotyping for both perpetrators and victims, indicating a need to address these attitudes for all students. Schools can address these attitudes through social-emotional learning programs and through staff intervention when inequitable and stereotyped attitudes are expressed. In addition, professional development for teachers is imperative, given that many teachers may knowingly or unknowingly express many inequitable attitudes through their teaching. For example, teachers' statements that "boys will be boys" or to the effect that girls' deserve harassment when dressing or acting in certain manners is supportive of gender stereotyping and inequity attitudes.

Interestingly, no clear pattern emerged regarding those models that did not have a significant association with these attitudes; sexual harassment victimization and homophobic perpetration both were not significantly associated with gender inequity at age 17, while homophobic victimization was not significantly associated with stereotyped attitudes at age 17. This lack of consistent relationships perhaps points to lack of clarity in the gender attitudes measurement model. It is unclear how students are understanding questions about equality between men and women, including dating and marriage behaviors, and it is possible that the heteronormativity of the scale as well as its focus on adult understandings of relationships (i.e., marriage) muddied students' reactions to various items of the scale (Reese-Weber, 2008). Future research could further parse out the relationship between gender attitudes and harassment involvement at the item level, so as to better identify whether or not certain attitudes regarding gender are especially linked to sexual harassment versus homophobic name-calling and perpetration versus victimization.

The longitudinal associations present in the gendered harassment cross-lagged models also reinforce the need for early prevention efforts in middle schools, as involvement in both homophobic and sexual harassment perpetration at age 13 was associated with involvement in the same at age 16, and again from age 16 to 17 for homophobic name-calling perpetration. Similarly, involvement in both forms of gendered harassment as a victim at age 13 was predictive of victimization at age 16 and again from age 16 to 17. These findings indicate that involvement in harassment as early as age 13 is related to individuals' involvement in late adolescence, again pointing to the importance of addressing and preventing these behaviors early on. These results are consistent with

findings in the extant literature that show a consistent relation among perpetration across time and victimization across time (Chiodo et al., 2009; Espelage et al., Under Review a; Espelage et al., Under Review b).

Contrary to hypotheses, there were no significant relations between victimization and perpetration across waves in terms of homophobic name-calling in the cross-lagged model. This finding indicates that involvement as a perpetrator is not significantly associated with victimization across time, and that victimization is not associated with perpetration across waves for this form of gendered harassment. This is not consistent with previous literature, which found that homophobic name-calling victimization was predictive of later perpetration (Birkett & Espelage, 2015). This inconsistency could be due to the normativity of homophobic name-calling for this sample and the significant correlations within wave between perpetration and victimization. In other words, students may see homophobic name-calling as an unproblematic aspect of their peer groups, rather than a disturbing behavior that lays the groundwork for increased involvement in name-calling. Future research could consider the homophobic name-calling measure at the item level, given that the scale includes both name-calling with friends as well as name-calling with individuals that are unknown or disliked by the respondent. It is possible that if the normative and "friendly" name-calling were separated from the other forms of name-calling, new cross-lagged relationships would emerge.

In terms of the cross-lagged model of sexual harassment, the results were more complex. Namely, sexual harassment victimization at age 13 was negatively associated with involvement in perpetration at age 16. Similarly, involvement in perpetration at age 16 was negatively associated with involvement as a victim at age 17. Contrary to these

negative associations, involvement in victimization at age 16 was positively associated with perpetration at age 17. This last pathway is consistent with findings that victimization in early high school is associated with increased perpetration in later high school (Chiodo et al., 2009).

These above findings suggest that in mid-adolescence, victimization is unlikely to lead to increased perpetration, whereas in late adolescence, involvement in sexual harassment as a victim can increase involvement in perpetration. This change in directionality over time implies that the mechanism underlying the relation between victimization and perpetration shifts depending on the developmental period. Perhaps perpetration is not seen as a viable option for those who are victimized in middle school, whereas those who are victimized in high school find perpetration to be a means to combat or manage their experience of victimization. Although sexual harassment and homophobic name-calling were modeled separately here in order to better understand the relations within these behaviors across time, future research could examine whether homophobic name-calling and sexual harassment involvement are predictive of each other, in order to further understand how these behaviors interact over time.

Although the current study is methodologically strong and includes a large longitudinal sample, there are some limitations. Sexual orientation, which had low response rates in the current study, and factors like childhood abuse and maltreatment, were each beyond the scope of this study but are important to consider in future research given their potential impact on the relations between gendered harassment and mental health outcomes. Additionally, the data considered here are self-report and do not include teacher-report or observation. These other forms of data-collection can provide nuance

and alternative viewpoints that are not captured from student self-report alone. The sample is from the U.S. Midwest and therefore may not be generalizable to other geographical areas. In addition, the potential impact of the school climate was not included in these analyses as multilevel modeling was not employed due to the low number of schools surveyed; given the impact of the surrounding environment on individuals' experience of harassment, school environment is important to consider (Rinehart & Espelage, 2015). Finally, due to the lack of variability in the data, growth modeling could not be used; in the future, this form of analysis could be used in order to better understand inter- and intra- individual change over time.

The findings presented here reinforce the negative impact of gendered harassment for all involved, from those who engage in homophobic name-calling towards friends to those who enact or experience sexual assault. For victims and perpetrators alike, these behaviors have lasting effects and need to be addressed. Despite teachers' potential discomfort with intervening when harassment occurs, it is clear that preventing further acts is important for students' health (Charmaraman, Jones, Stein, & Espelage, 2013; Meyer, 2008). Administrators and teachers have a legal responsibility to address sexual harassment, and these findings point to the lasting effects of shirking this responsibility.

Given the negative effects of harassment, students benefit when schools engage in far-reaching prevention and intervention efforts. School-wide policies that promote gender equity and are intolerant of gendered harassment are associated with decreased sexual harassment (Rinehart & Espelage, 2015). These policies therefore should include clear language regarding teachers' responsibility for intervening when harassment s witnessed, and proactive teaching regarding the unacceptability of gendered harassment.

Professional development regarding the impact of these acts, which are often normalized and ignored, is needed so that teachers and other school professionals can better understand the importance of intervening when harassment occurs and can be empowered to employ prevention efforts within their classrooms (Chiodo et al., 2009). In addition, school psychologists need to be aware of the potential involvement of gendered harassment when a student presents with depression or substance use issues; psychologists can therefore assess for gendered harassment involvement when they are working with a student with these mental health outcomes. The negative mental health outcomes for students who are involved in gendered harassment as either perpetrators or victims, or both, indicates that schools' efforts to prevent these behaviors from ever occurring, and intervening when they do occur, is imperative for our students' well-being.

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TABLES AND FIGURES

Table 1

Demographic Characteristics

	Wave 1	Wave 2	Wave 3	Total
Female	50.7%	53.2%	51.7%	50.4%
Race				
African American	56.9%	48.6%	51.1%	49.1%
White	26.4%	28.9%	30.0%	34.3%
Hispanic	4.8%	7.4%	7.8%	5.7%
Asian	1.3%	2.7%	2.6%	2.4%
Other	10.7%	12.4%	8.5%	8.4%
Age	12.98 (.814)	15.81 (1.039)	16.78 (1.044)	
11	.4%	-	-	
12	30.5%	-	-	
13	41.8%	-	-	
14	25.0%	9.7%	.2%	
15	2.3%	30.7%	9.6%	
16	-	33.2%	31.0%	
17	-	21.9%	32.7%	
18	-	4.4%	22.7%	
19	-	.1%	3.6%	
Grade				
7	46.4%	-	-	
8	53.6%	-	-	
9	-	34.4%	.9%	
10	-	34.0%	34.3%	
11	-	30.1%	34.5%	
12	-	1.4%	30.2%	
N	496	2016	1919	3549

Note: Percentages are marked as such; otherwise numbers reported are means with standard deviations in parentheses.

Table 2

Descriptives of Measurement Models

	W1			W2			W3		
	Total	F	M	Total	F	M	Total	F	M
AOD§	1.17 (.38)	1.15 (.30)	1.18 (.45)	1.36 (.73)	1.34 (.71)	1.38 (.75)	1.40 (.83)	1.34 (.69)	1.49 (.95)
Dep	1.94 (.54)	2.06 (.57)	1.81 (.49)	2.08 (.60)	2.25 (.60)	1.99 (.53)	2.10 (.55)	2.21 (.55)	1.97 (.51)
H Vict	1.36 (.65)	1.28 (.50)	1.44 (.76)	1.35 (.59)	1.26 (.49)	1.45 (.66)	1.39 (.71)	1.28 (.59)	1.50 (.80)
H Perp	1.73 (.91)	1.65 (.78)	1.82 (1.03)	1.57 (.76)	1.43 (.62)	1.72 (.87)	1.53 (.79)	1.36 (.59)	1.71 (.92)
SH Vict	1.20 (.36)	1.28 (.41)	1.13 (.27)	1.40 (.48)	1.46 (.50)	1.32 (.44)	1.35 (.49)	1.38 (.47)	1.31 (.50)
SH Perp	1.06 (.17)	1.06 (.18)	1.05 (.16)	1.13 (.28)	1.10 (.22)	1.17 (.34)	1.13 (.34)	1.09 (.24)	1.17 (.41)
Gender Inequity	-	-	-	1.63 (.72)	1.48 (.59)	1.80 (.81)	1.95 (1.04)	1.75 (.95)	2.15 (1.09)
Gender Stereotype	-	-	-	1.93 (.57)	1.85 (.53)	2.02 (.60)	1.75 (.64)	1.65 (.54)	1.85 (.71)

Note: Mean (Standard Deviation) reported. AOD (alcohol and other drug), Dep (depression), H (homophobic name-calling), SH (sexual harassment), vict (victimization), perp (perpetration). §Wave 1 of AOD asked for use in past year and item numbers represent different substances, whereas Wave 2 and 3 asked for use in past 30 days and items are the same across these waves.

Table 3

Correlations between forms of gendered harassment: total sample

	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)
1) H Vict W1												
2) H Vict W2	.28**											
3) H Vict W3	.24**	.41**										
4) H Perp W1	.54**	.24**	.28**									
5) H Perp W2	.26**	.51**	.33**	.45**								
6) H Perp W3	.26**	.31**	.58**	.35**	.47**							
7) SH Vict W1	.20**	-.01	-.05	.20**	.12	.04						
8) SH Vict W2	.13*	.31**	.10**	.12	.25**	.12**	.27**					
9) SH Vict W3	.12	.16**	.38**	.11	.16**	.31**	.14*	.44**				
10) SH Perp W1	.19**	.06	.02	.37**	.23**	.13	.34**	.13*	.04			
11) SH Perp W2	.12	.41**	.14**	.22**	.38**	.20**	-.47	.49**	.21**	.17**		
12) SH Perp W3	.19**	.15**	.44**	.22**	.23**	.41**	-.03	.18**	.57**	.06	.23**	

Note: ** indicates correlation is significant at the .01 level; * indicates it is significant at the .05 level. H (homophobic name-calling), Vict (victimization), Perp (perpetration), SH (sexual harassment).

Table 4

Correlations between forms of gendered harassment: females

	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)
1) H Vict W1												
2) H Vict W2	.13											
3) H Vict W3	.07	.43**										
4) H Perp W1	.36**	.07	.12									
5) H Perp W2	.13	.41**	.24**	.34**								
6) H Perp W3	.20*	.30**	.47**	.27**	.36**							
7) SH Vict W1	.40**	-.04	-.08	.33**	.13	.22*						
8) SH Vict W2	.07	.30**	.16**	.18*	.24**	.22**	.32**					
9) SH Vict W3	-.04	.22**	.35**	.24**	.22**	.32**	.26**	.50**				
10) SH Perp W1	.27**	.07	.04	.43**	.11	.20*	.37**	.18*	.06			
11) SH Perp W2	-.01	.30**	.11**	.20*	.26**	.22**	-.03	.42**	.25**	.20*		
12) SH Perp W3	-.02	.13**	.30**	.23*	.18**	.29**	.05	.17**	.45**	-.00	.17**	

Note: ** indicates correlation is significant at the .01 level; * indicates it is significant at the .05 level. H (homophobic name-calling), Vict (victimization), Perp (perpetration), SH (sexual harassment).

Table 5

Correlations between forms of gendered harassment: males

	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)
1) H Vict W1												
2) H Vict W2	.41**											
3) H Vict W3	.31**	.36**										
4) H Perp W1	.63**	.40**	.34**									
5) H Perp W2	.33**	.54**	.34**	.51**								
6) H Perp W3	.27**	.27**	.62**	.36**	.48**							
7) SH Vict W1	.08	.09	.06	.12	.20*	.03						
8) SH Vict W2	.21*	.40**	.10*	.09	.36**	.12**	.11					
9) SH Vict W3	.23*	.14**	.44**	.04	.16**	.37**	-.10	.36**				
10) SH Perp W1	.16*	.04	.01	.34**	.37**	.11	.28**	.03	.02			
11) SH Perp W2	.22*	.45**	.13**	.24**	.42**	.16**	-.06	.63**	.21**	.14		
12) SH Perp W3	.27**	.13**	.48**	.19*	.23**	.44**	-.07	.24**	.68**	.10	.24**	

Note: ** indicates correlation is significant at the .01 level; * indicates it is significant at the .05 level. H (homophobic name-calling), Vict (victimization), Perp (perpetration), SH (sexual harassment).

Table 6

Measurement Models

	Wave 1	Wave 2	Wave 3
Alcohol Other Drug§			
Item 1	.73** (1.00)**	.46** (1.00)**	.49** (1.00)**
Item 2	.74** (1.19)**	.23** (.14)**	.44** (.44)**
Item 3	.57** (.73)**	.87** (1.57)**	.91** (1.78)**
Item 4	.81** (1.11)**	.83** (1.18)**	.91** (1.52)**
Item 5	.89** (1.30)**	.58** (1.62)**	.53** (1.56)**
Item 6	.60** (1.08)**	.51** (.54)**	.48** (.52)**
Fit Statistics			
χ^2	65.68, p <.001	333.43, p <.001	387.50, p <.001
RMSEA	0.12, p <.001	.13, p <.001	.15, p <.001
CFI	.95	.90	.91
TLI	.93	.84	.86
Depression			
Item 1	.72** (1.00)**	.79** (1.00)**	.84** (1.00)**
Item 2	.65** (.96)**	.70** (.84)**	.79** (.92)**
Item 3	.71** (1.07)**	.74** (1.07)**	.83** (1.17)**
Item 4	.72** (1.05)**	.71** (.97)**	.74** (.96)**
Item 5	.75* (1.17)**	.72** (1.04)**	.79* (1.07)**
Fit Statistics			
χ^2	20.12, p <.01	100.43, p <.001	152.58, p <.001
RMSEA	.08, p <.1	.10, p <.001	.13, p <.001
CFI	.98	.98	.97
TLI	.96	.95	.95
Sexual Harass Vict			
Item 1	.71** (1.00)**	.62** (1.00)**	.50** (1.00)**
Item 2	.48** (.40)**	.52** (.44)**	.68** (.77)**
Item 3	.58** (.60)**	.48** (.54)**	.56** (.73)**
Item 4	.72** (.87)**	.70** (.87)**	.69** (.91)**
Item 5	.48** (.30)**	.59** (.46)**	.76** (.69)**
Item 6	.22** (.15)**	.39** (.17)**	.61** (.39)**
Fit Statistics			
χ^2	52.50, p <.001	156.57, p <.001	283.67, p <.001
RMSEA	.10, p <.01	.09, p <.001	.13, p <.001
CFI	.91	.93	.91
TLI	.85	.88	.86

Table 6 (continued)

	Wave 1	Wave 2	Wave 3
Sexual Harass Perp			
Item 1	.49** (1.00)**	.47** (1.00)**	.43** (1.00)**
Item 2	.48** (.47)**	.67** (.55)**	.78** (.85)**
Item 3	.61** (.69)**	.56** (.64)**	.66** (.85)**
Item 4	.65** (.90)**	.60** (.65)**	.83** (1.01)**
Item 5	.36** (.24)**	.74** (.60)**	.85** (.92)**
Item 6	.20* (.05)*	.65** (.30)**	.75** (.69)**
Fit Statistics			
χ^2	80.50, p <.001	150.87, p <.001	285.29 p <.001
RMSEA	.13, p <.001	.09, p <.001	.13, p <.001
CFI	.80	.95	.95
TLI	.66	.91	.91
Homophobic Vict			
Item 1	.49** (1.00)**	.36** (1.00)**	.43** (1.00)**
Item 2	.79** (1.17)**	.85** (1.26)**	.90** (1.24)**
Item 3	.76** (1.42)**	.80** (1.43)**	.86** (1.28)**
Item 4	.77** (1.12)**	.66** (.95)**	.82** (1.02)**
Item 5	.73** (1.17)**	.51** (.89)**	.71** (1.06)**
Fit Statistics			
χ^2	16.59 p <.01	166.40, p <.001	218.09, p <.001
RMSEA	.07, p = ns	.13, p <.001	.15, p <.001
CFI	.99	.94	.96
TLI	.97	.89	.92
Homophobic Perp			
Item 1	.66** (1.00)**	.49** (1.00)**	.55** (1.00)**
Item 2	.79** (1.03)**	.84** (.97)**	.84** (.86)**
Item 3	.82** (1.36)**	.79** (1.26)**	.79** (1.02)**
Item 4	.77** (1.13)**	.68** (.93)**	.69** (.76)**
Item 5	.62** (.82)**	.59** (.89)**	.68** (.87)**
Fit Statistics			
χ^2	36.86, p <.001	263.03, p <.001	140.12, p <.001
RMSEA	.11, p <.01	.16, p <.001	.12, p <.001
CFI	.97	.92	.96
TLI	.94	.85	.92
Gender Inequity			
Item 1	-	.66** (1.00)**	.80** (1.00)**
Item 2	-	.55** (.86)**	.79** (.97)**
Item 3	-	.72** (1.14)**	.86** (1.09)**
Item 4	-	.77** (1.15)**	.86** (1.05)**

Table 6 (continued)

	Wave 1	Wave 2	Wave 3
Fit Statistics			
χ^2	-	6.81, p <.05	13.29, p <.01
RMSEA	-	.04, p = ns	.05, p = ns
CFI	-	1.00	1.00
TLI	-	.99	.99
Gender Stereotype			
Item 1	-	.54** (1.00)**	.60** (1.00)**
Item 2	-	.70** (1.15)**	.75** (1.01)**
Item 3	-	.59** (1.07)**	.66** (1.00)**
Item 4	-	.50** (.96)**	.57** (.91)**
Item 5	-	.30** (.60)**	.48** (.88)**
Item 6	-	.54** (1.02)**	.67** (1.06)**
Item 7	-	.51** (.86)**	.61** (.81)**
Fit Statistics			
χ^2	-	255.44, p <.001	338.70, p <.001
RMSEA	-	.09, p <.001	.11, p <.001
CFI	-	.90	.91
TLI	-	.84	.87

Note: Standardized coefficients (unstandardized coefficients) reported.

** when $p < .001$; *when $p < .01$. Perp = perpetration, Vict = victimization. §Wave 1 of AOD asked for use in past year and item numbers represent different substances, whereas Wave 2 and 3 asked for use in past 30 days and items are the same across these waves.

Figure 1

Harassment Predicting Mental Health Main Effects Model

Harass (gendered harassment perpetration or victimization), AOD (alcohol and other drug), Dep (depression)

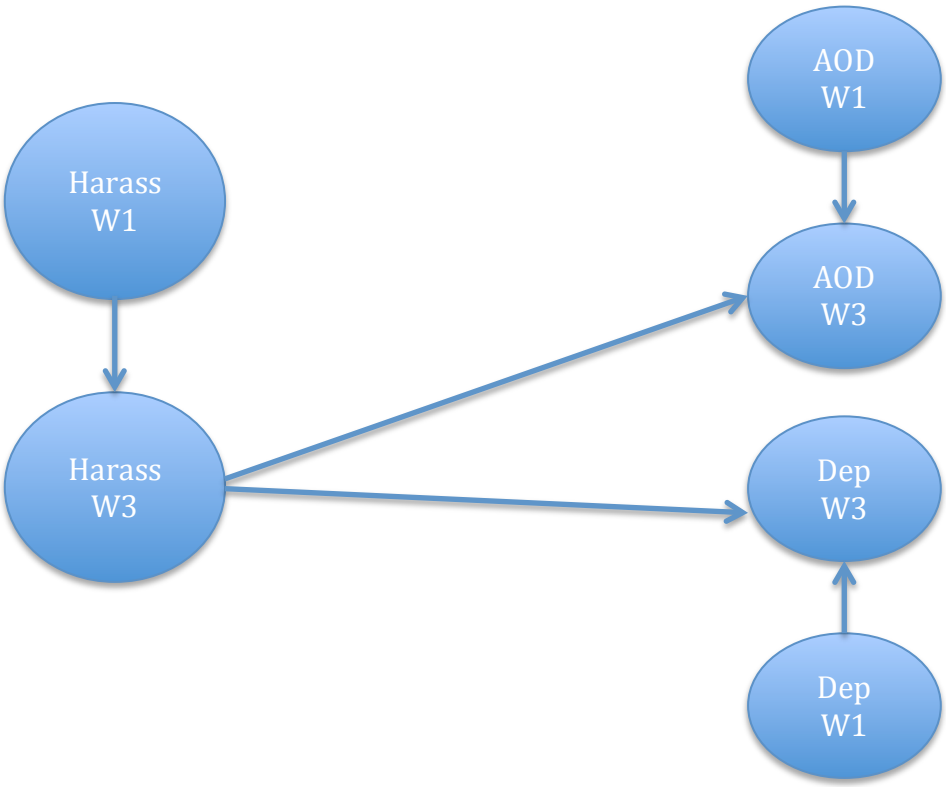


Figure 2

Cross-lagged Harassment Model

Vict (gendered harassment victimization) and Perp (gendered harassment perpetration)

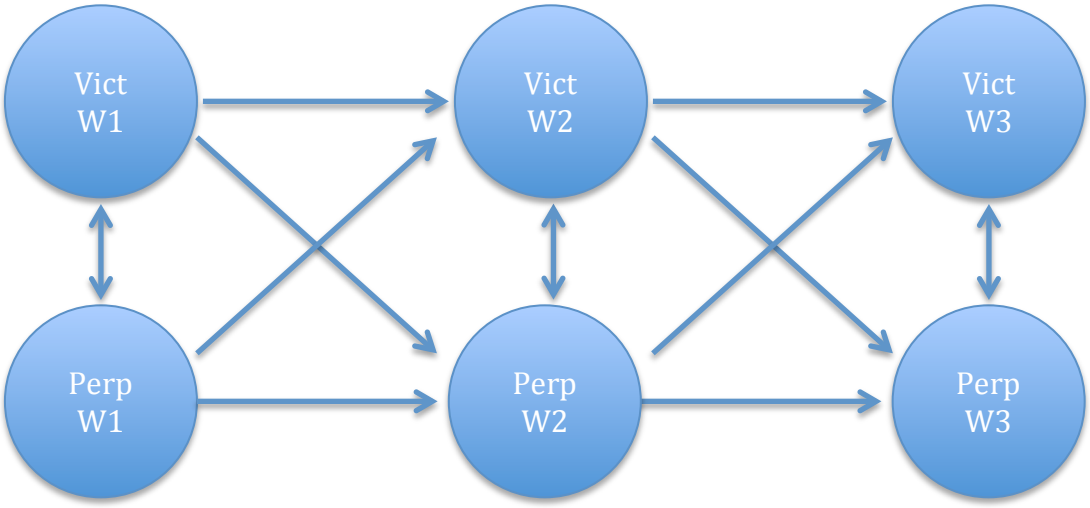
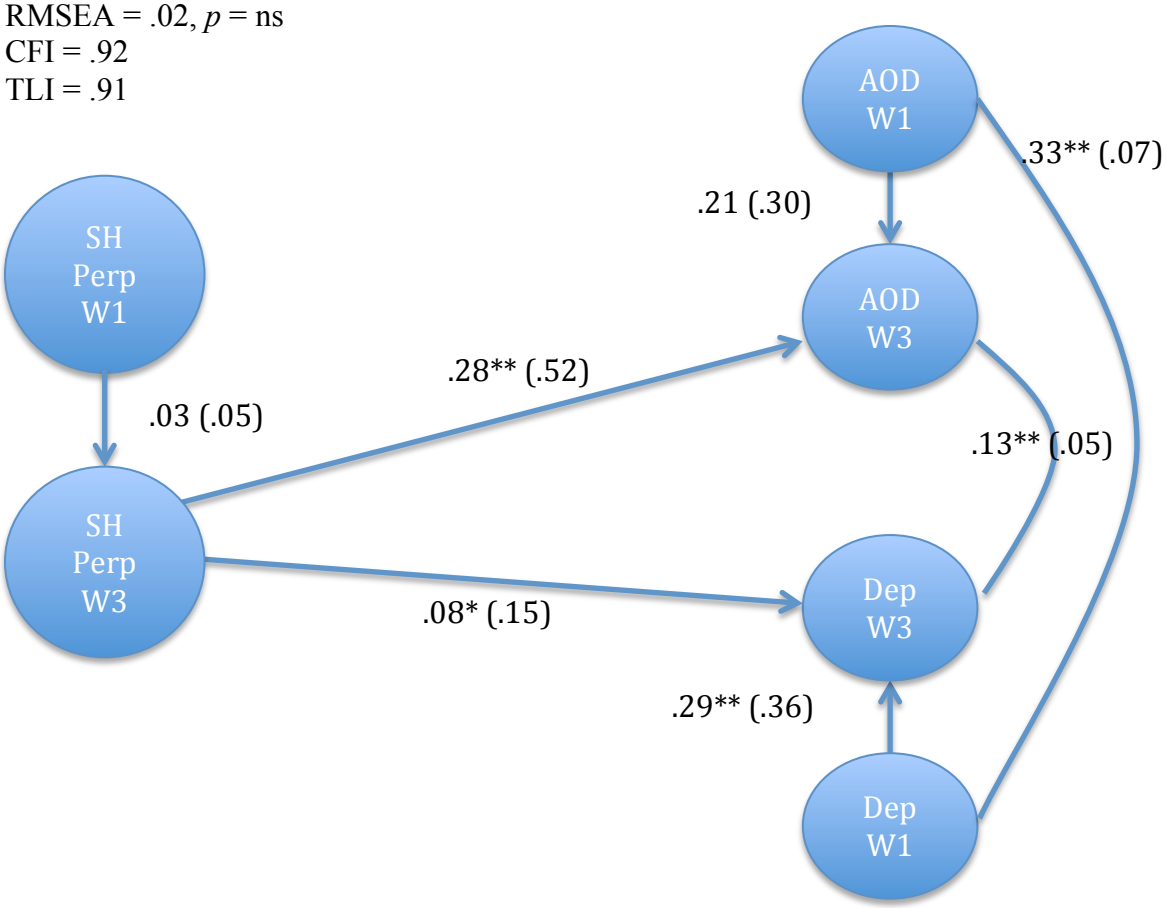


Figure 3

Sexual Harassment Perpetration

Model Fit
χ^2 = 2289.83, p <.001
RMSEA = .02, p = ns
CFI = .92
TLI = .91



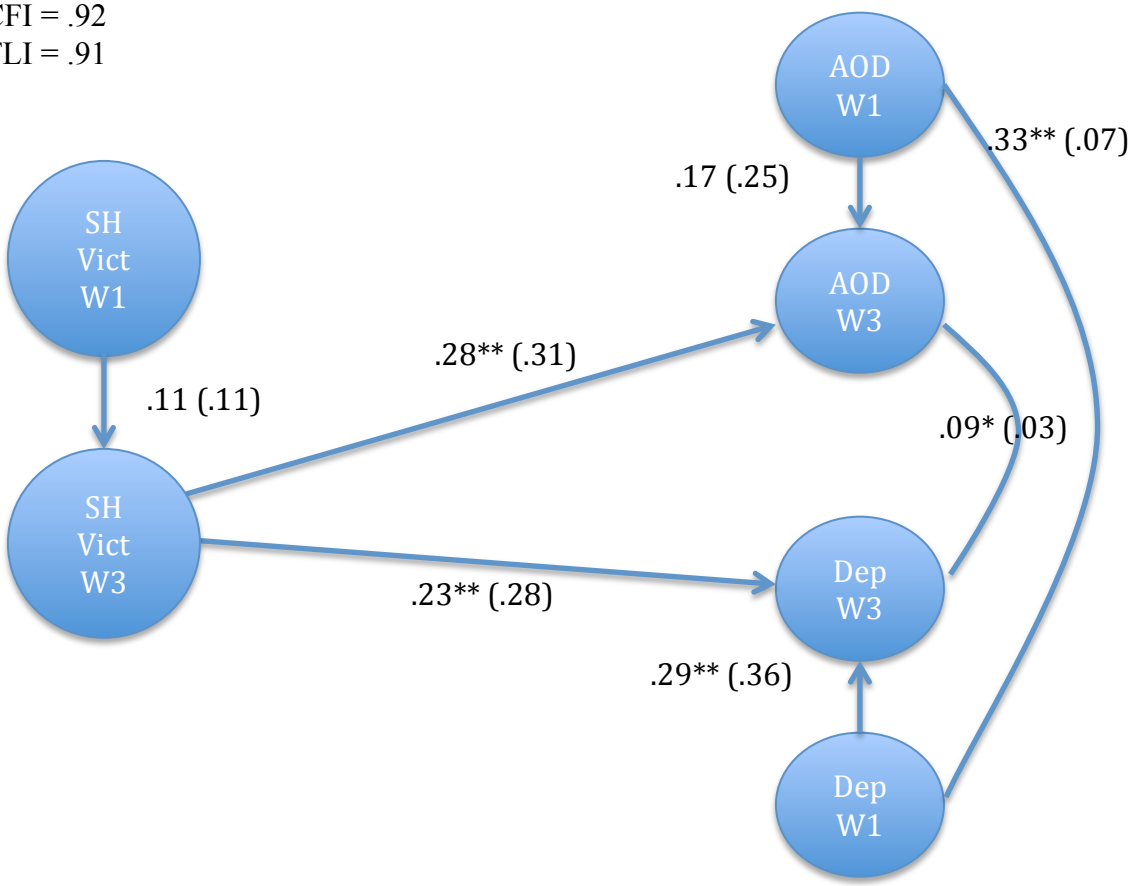
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001; *when p < .01

Controls:
For Perpetration W3, race was significant (African American β = .09, p <.01; Other β = .09, p <.01) and gender was significant (Female β = -.11, p <.001)
For Depression W3, race was significant (African American β = -.17, p <.001) and gender was significant (Female β = .23, p <.001)
For Alcohol and Other Drug W3, race was significant (African American β = -.08, p <.01; Hispanic β = -.08, p <.001) and gender was not significant

Figure 4

Sexual Harassment Victimization

Model Fit
χ^2 = 2143.45, p <.001
RMSEA = .02, p = ns
CFI = .92
TLI = .91



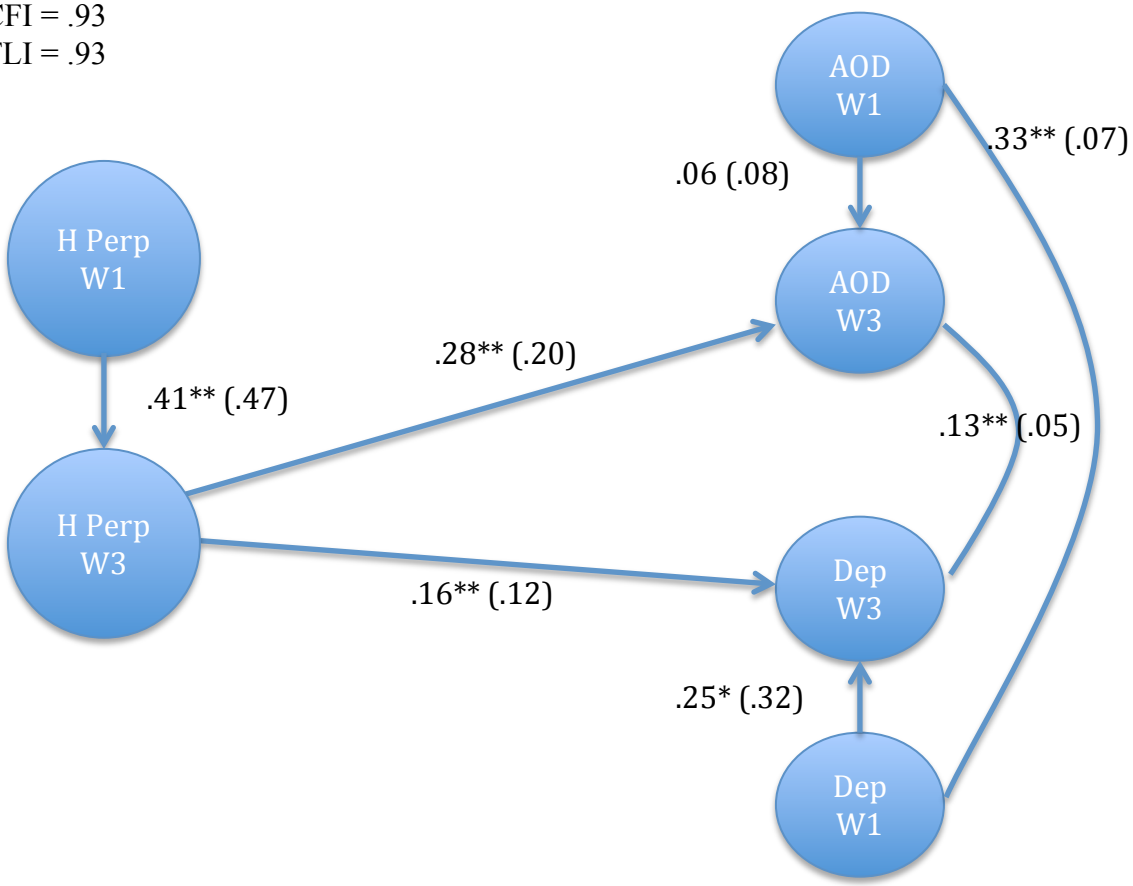
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Victimization W3, race was not significant and gender was not significant
For Depression W3, race was significant (African American β = -.16, p <.001) and gender was significant (Female β = .21, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.08, p <.01) and gender was significant (Female β = -.10, p <.001)

Figure 5

Homophobic Name-Calling Perpetration

Model Fit
χ^2 = 1856.16, p <.001
RMSEA = .02, p = ns
CFI = .93
TLI = .93



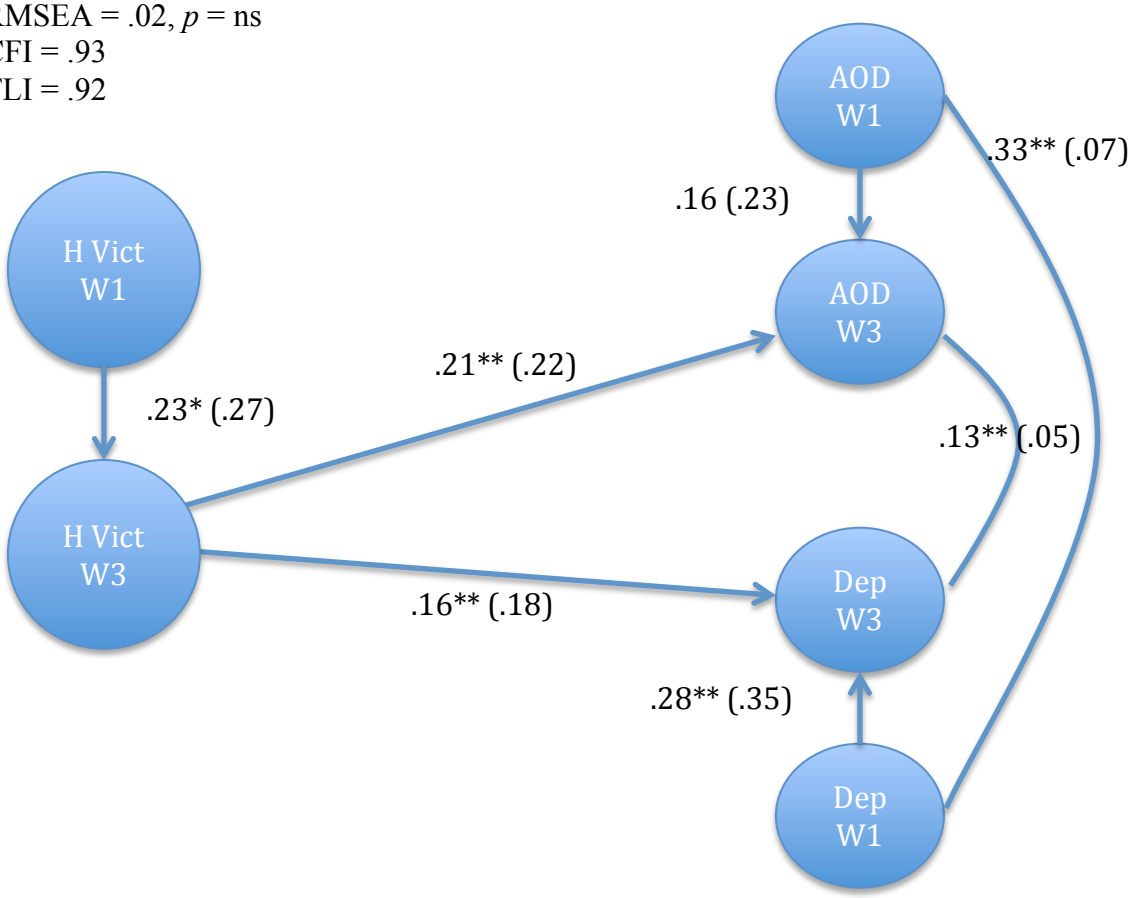
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Perpetration W3, race was not significant and gender was (Female β = -.21, p <.001)
For Depression W3, race was significant (African American β = -.16, p <.001) and gender was significant (Female β = .27, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.08, p <.01) and gender was not significant

Figure 6

Homophobic Name-Calling Victimization

Model Fit
χ^2 = 2052.05, p <.001
RMSEA = .02, p = ns
CFI = .93
TLI = .92



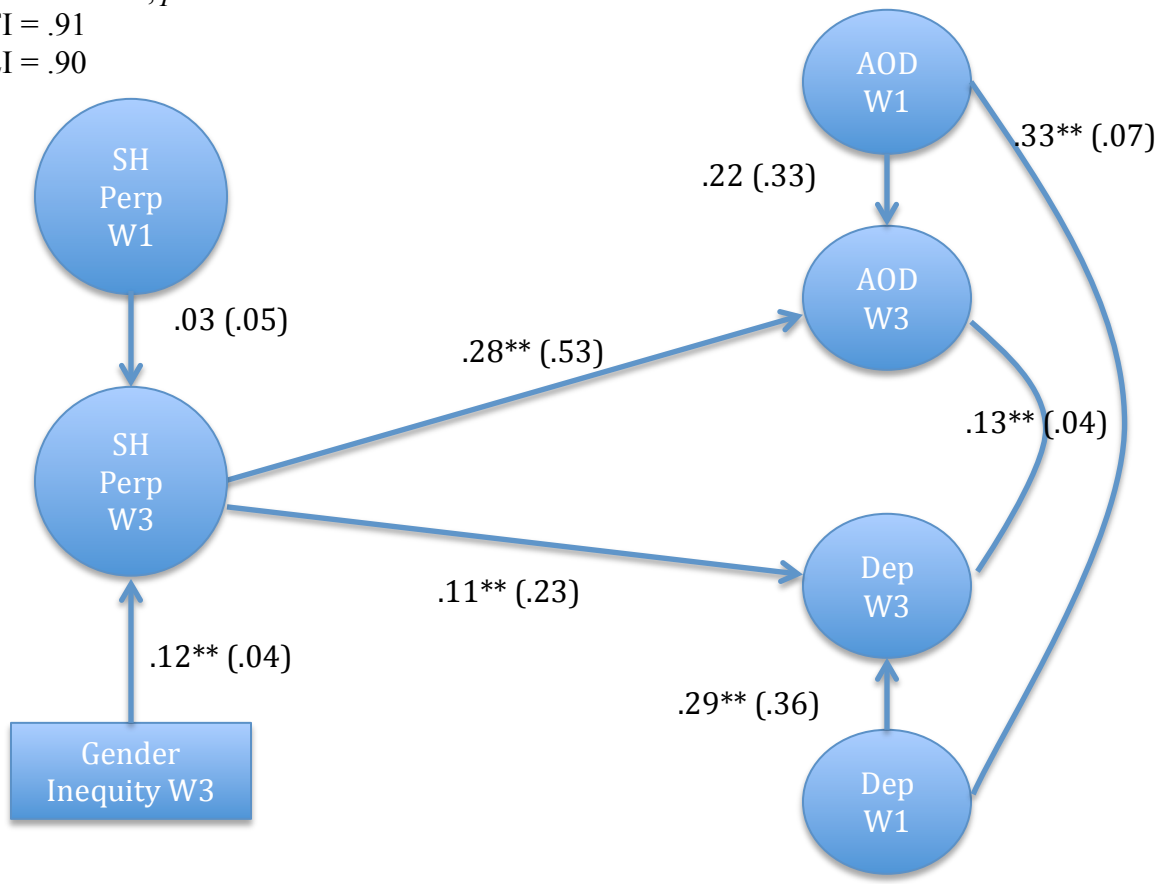
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Victimization W3, race was not significant and gender was significant (Female β = -.09, p <.01)
For Depression W3, race was significant (African American β = -.16, p <.001) and gender was significant (Female β = .24, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.08, p <.01) and gender was not significant

Figure 7

Sexual Harassment Perpetration with Gender Inequity

Model Fit
χ^2 = 2482.26, *p* <.001
RMSEA = .03, *p* = ns
CFI = .91
TLI = .90



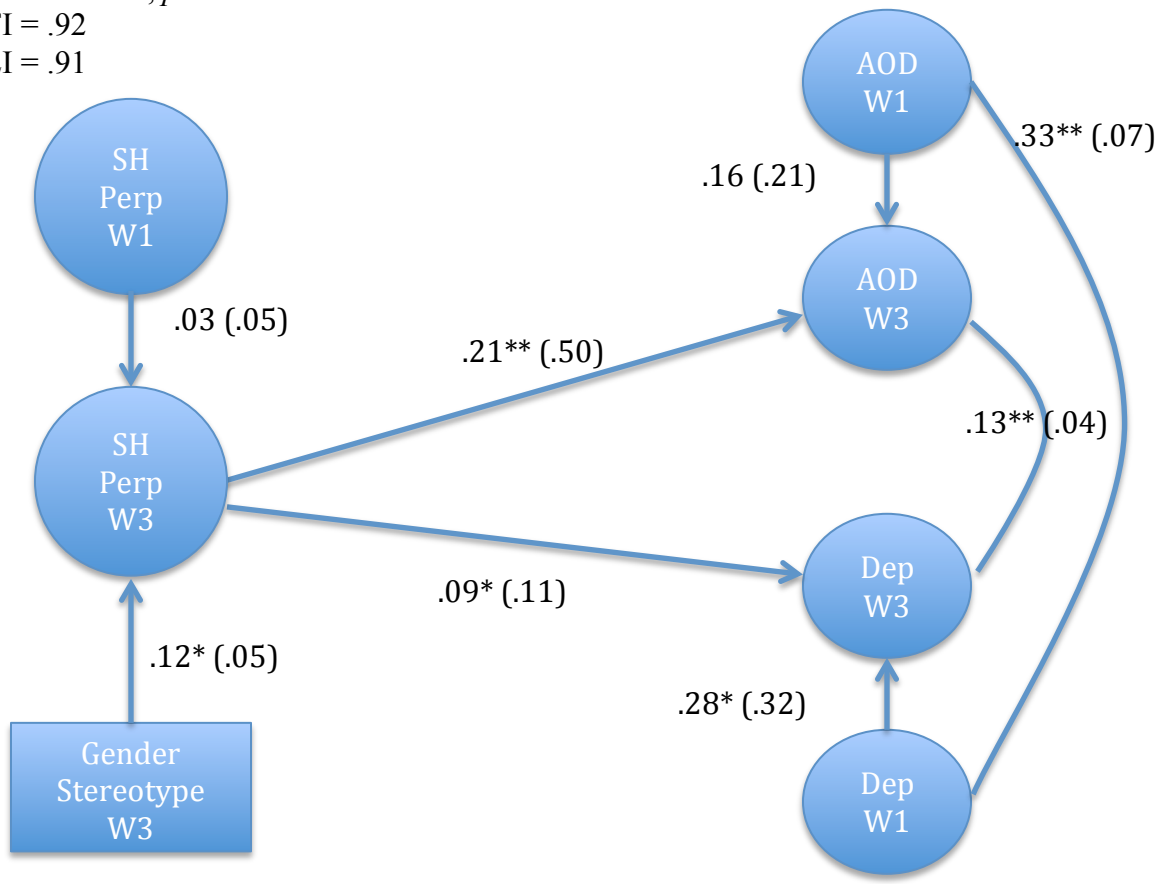
Note: Standardized coefficient (unstandardized coefficient), ** when *p* < .001, *when *p* < .01

Controls:
For Perpetration W3, race was not significant and gender was significant (Female β = -.08, *p* <.01)
For Depression W3, race was significant (African American β = -.09, *p* <.01) and gender was significant (Female β = .17, *p* <.001)
For Alcohol and Other Drug W3, race was significant (African American β = -.07, *p* <.01; Hispanic β = -.08, *p* <.001) and gender was not significant

Figure 8

Sexual Harassment Perpetration with Gender Stereotyping

Model Fit
χ^2 = 2441.84, *p* <.001
RMSEA = .03, *p* = ns
CFI = .92
TLI = .91



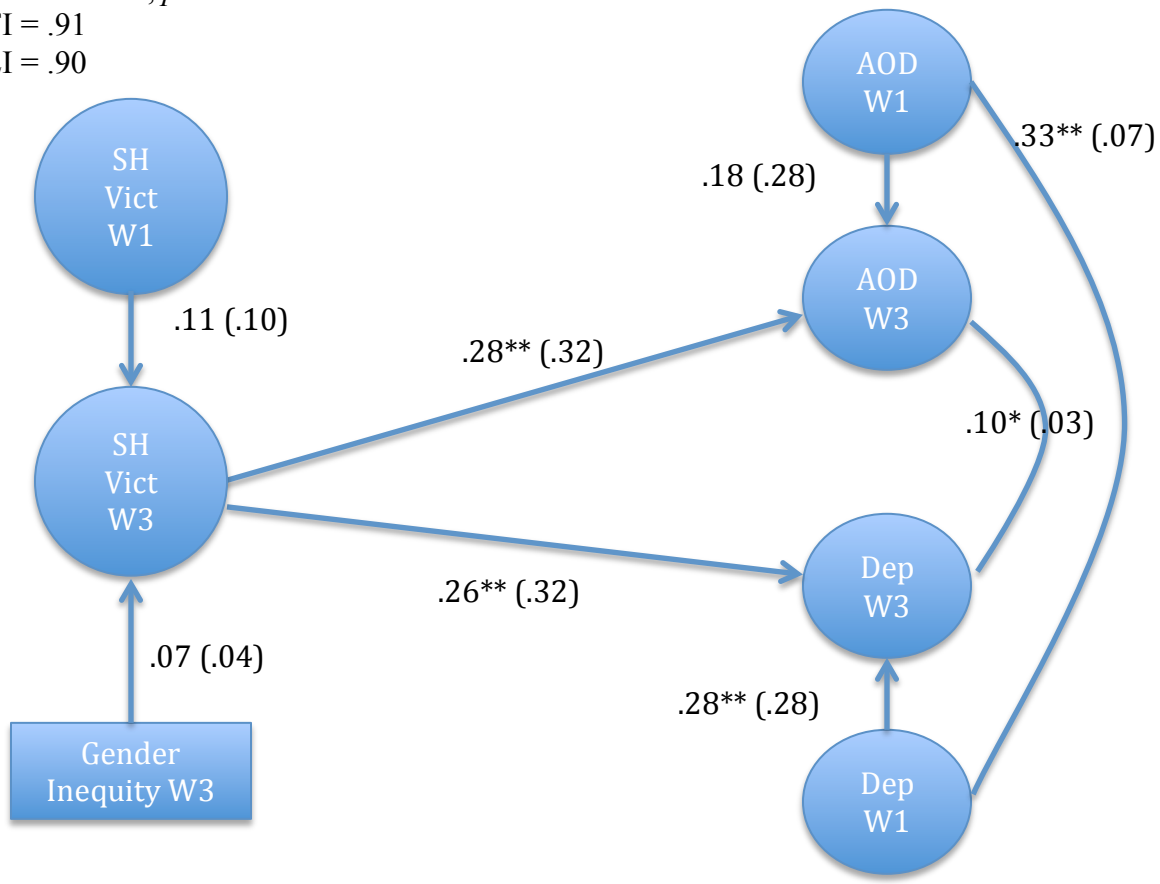
Note: Standardized coefficient (unstandardized coefficient), ** when *p* < .001, *when *p* < .01

Controls:
For Perpetration W3, race was significant (African American β = .08, *p* <.01; Other β = .09, *p* <.01), and gender was significant (Female β = -.09, *p* <.01)
For Depression W3, race was significant (African American β = -.16, *p* <.001) and gender was significant (Female β = .24, *p* <.001)
For Alcohol and Other Drug W3, race was significant (African American β = -.07, *p* <.01; Hispanic β = -.08, *p* <.001) and gender was not significant

Figure 9

Sexual Harassment Victimization with Gender Inequity

Model Fit
χ^2 = 2350.40, p <.001
RMSEA = .02, p = ns
CFI = .91
TLI = .90



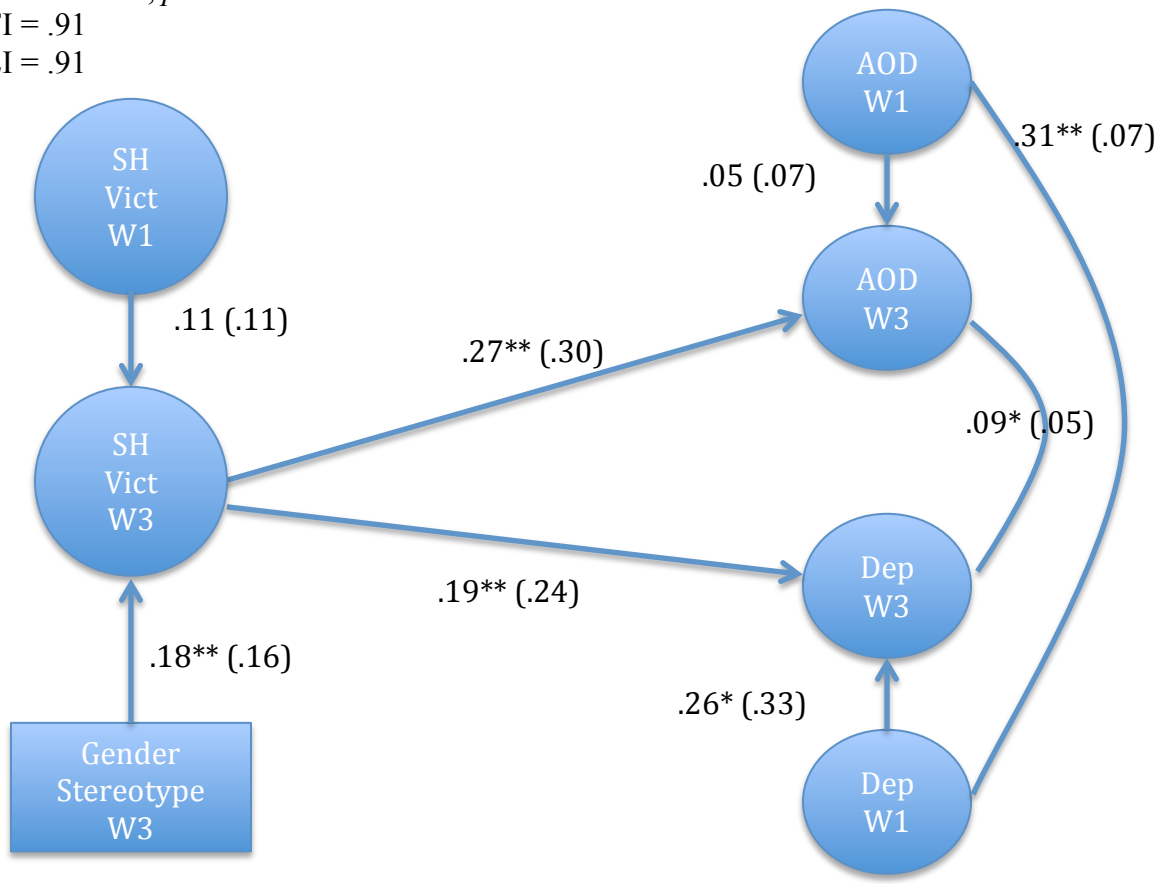
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Victimization W3, race was not significant and gender was not significant
For Depression W3, race was significant (African American β = -.08, p <.01) and gender was significant (Female β = .15, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.07, p <.01) and gender was significant (Female β = -.10, p <.001)

Figure 10

Sexual Harassment Victimization with Gender Stereotyping

Model Fit
χ^2 = 2262.95, p <.001
RMSEA = .02, p = ns
CFI = .91
TLI = .91



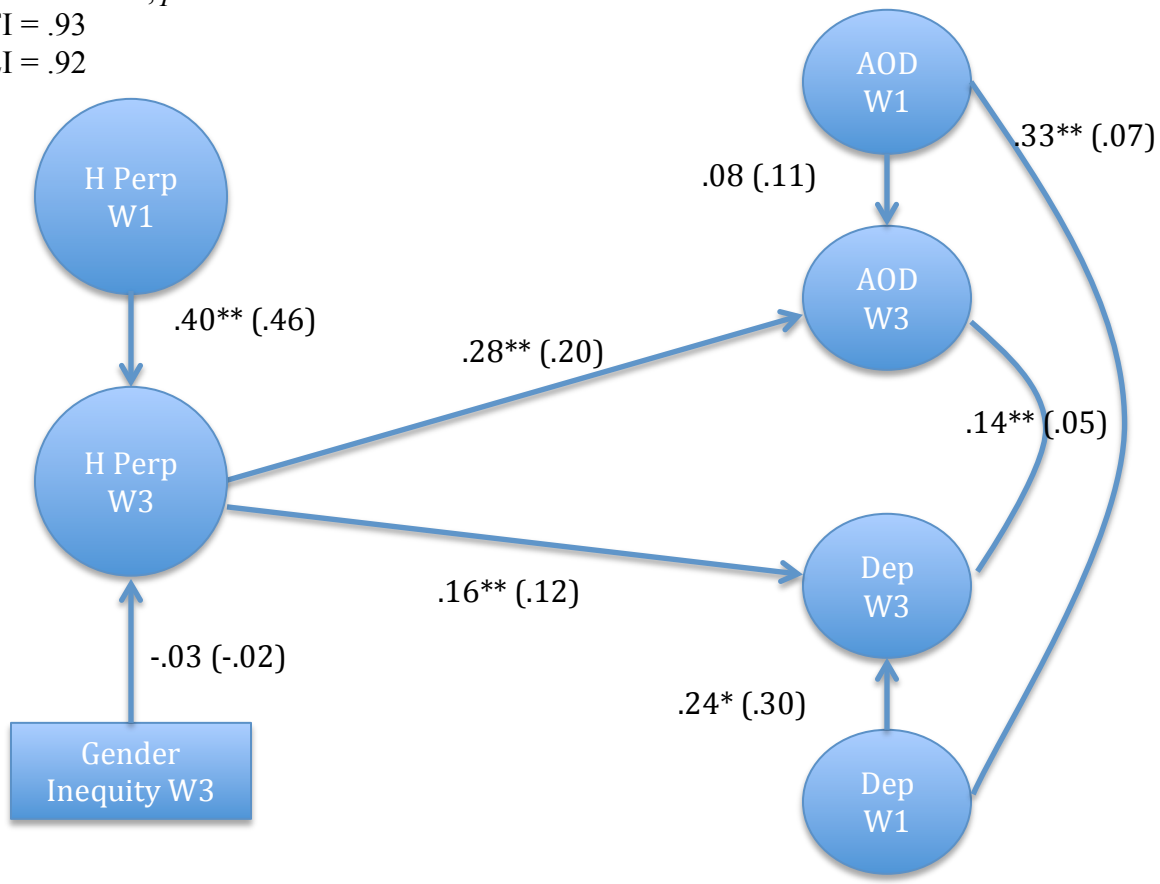
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Victimization W3, race was not significant and gender was not significant
For Depression W3, race was significant (African American β = -.18, p <.001) and gender was significant (Female β = .24, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.07, p <.001) and gender was significant (Female β = -.09, p <.001)

Figure 11

Homophobic Name-Calling Perpetration with Gender Inequity

Model Fit
χ^2 = 2069.07, p <.001
RMSEA = .02, p = ns
CFI = .93
TLI = .92



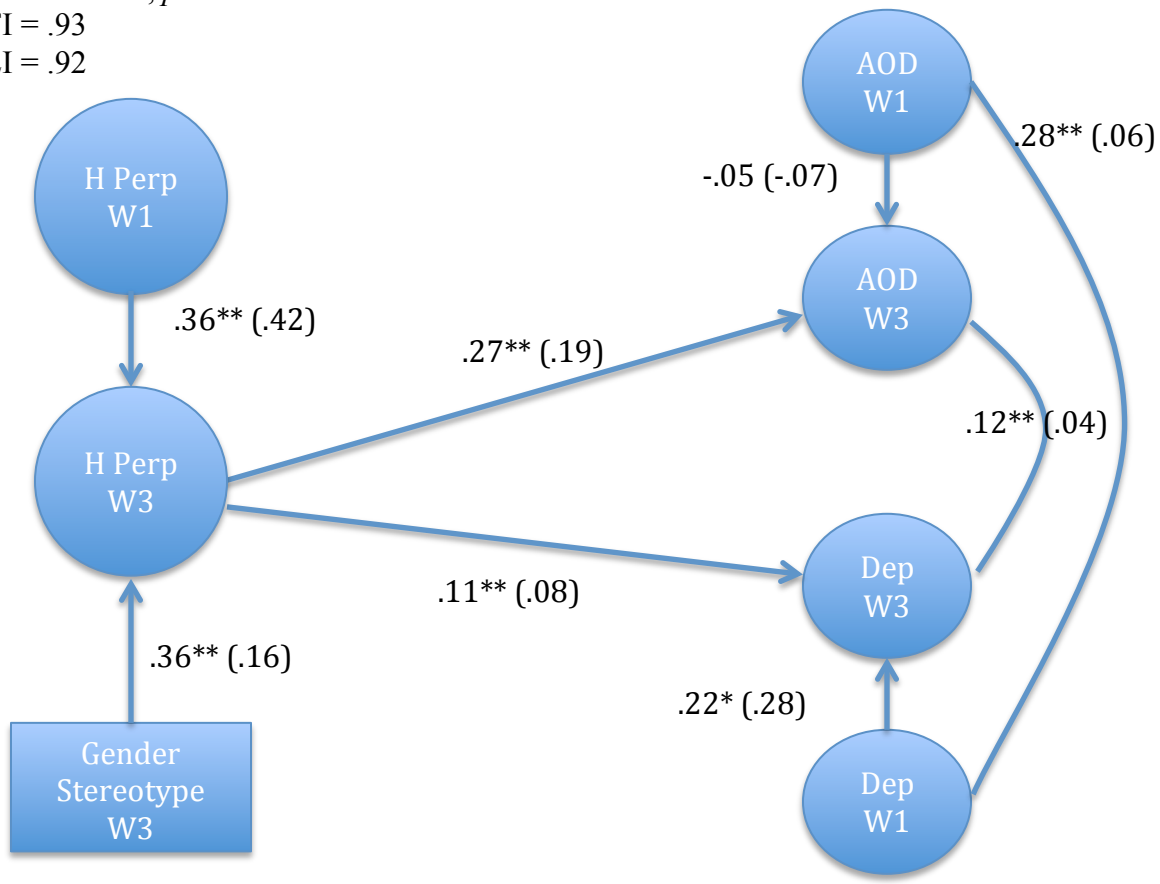
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Perpetration W3, race was not significant and gender was significant (Female β = -.21, p <.001)
For Depression W3, race was significant (African American β = -.08, p <.01) and gender was significant (Female β = .21, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.08, p <.01) and gender was not significant

Figure 12

Homophobic Name-Calling Perpetration with Gender Stereotyping

Model Fit
χ^2 = 1953.93, p <.001
RMSEA = .02, p = ns
CFI = .93
TLI = .92



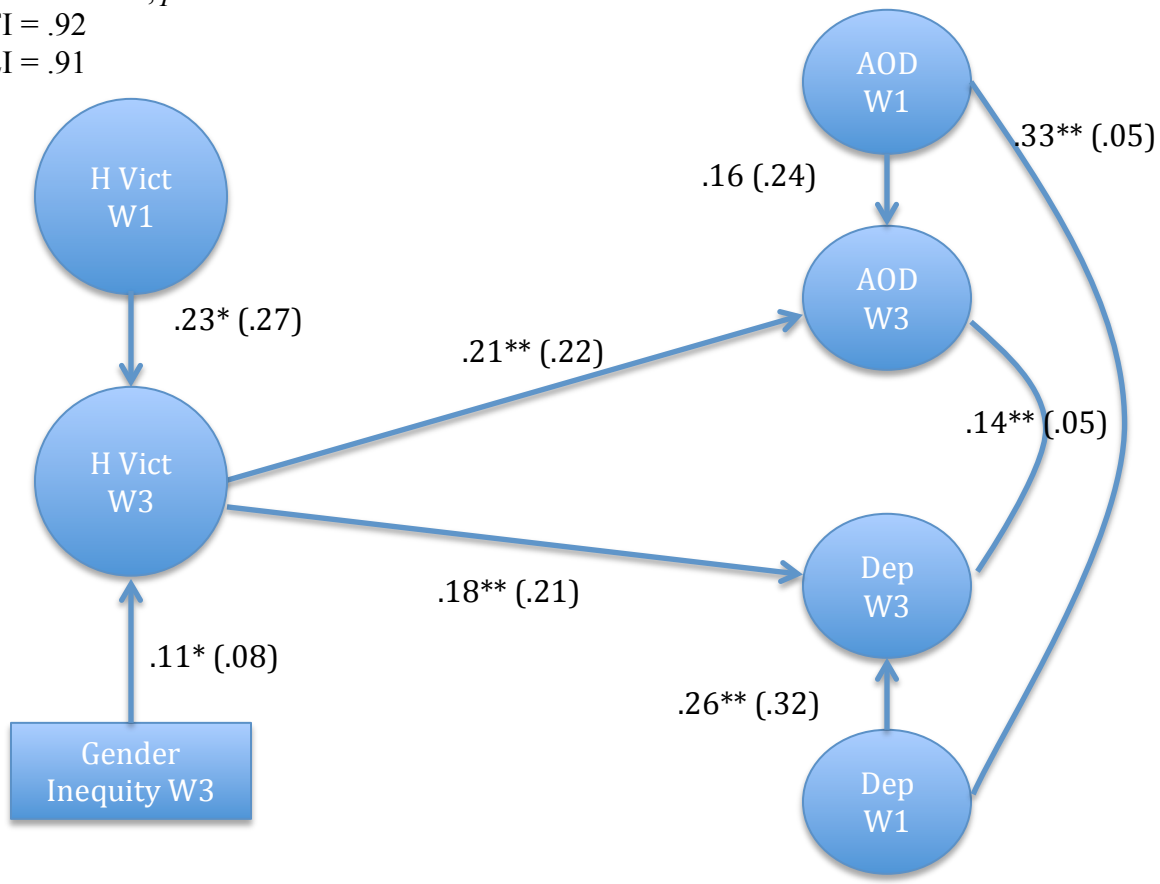
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Perpetration W3, race was not significant and gender was significant (Female β = -.19, p <.01)
For Depression W3, race was significant (African American β = -.17, p <.001) and gender was significant (Female β = .29, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.08, p <.01) and gender was not significant

Figure 13

Homophobic Name-Calling Victimization with Gender Inequity

Model Fit
χ^2 = 2248.90, p <.001
RMSEA = .03, p = ns
CFI = .92
TLI = .91



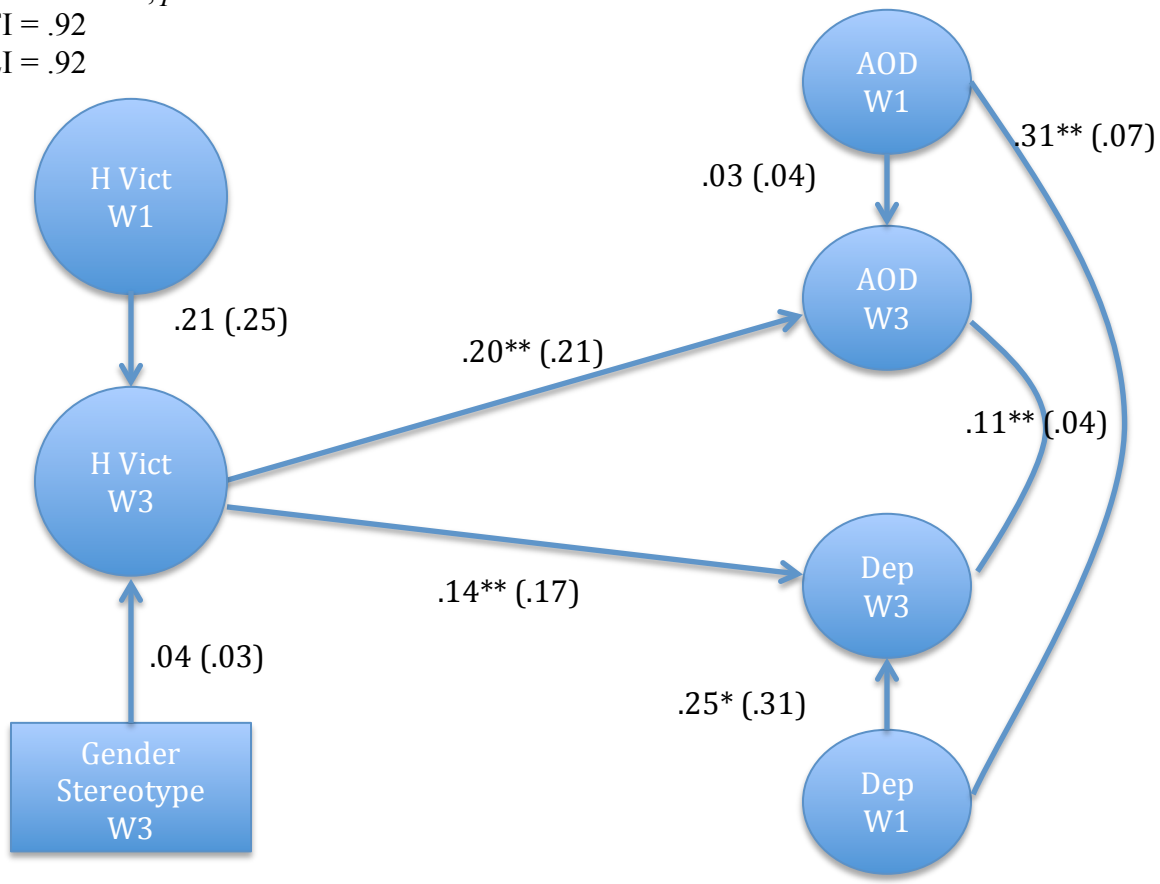
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Victimization W3, race was not significant and gender was not significant
For Depression W3, race was significant (African American β = -.08, p <.01) and gender was significant (Female β = .19, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.08, p <.01) and gender was not significant

Figure 14

Homophobic Name-Calling Victimization with Gender Stereotyping

Model Fit
χ^2 = 2197.59, p <.001
RMSEA = .03, p = ns
CFI = .92
TLI = .92



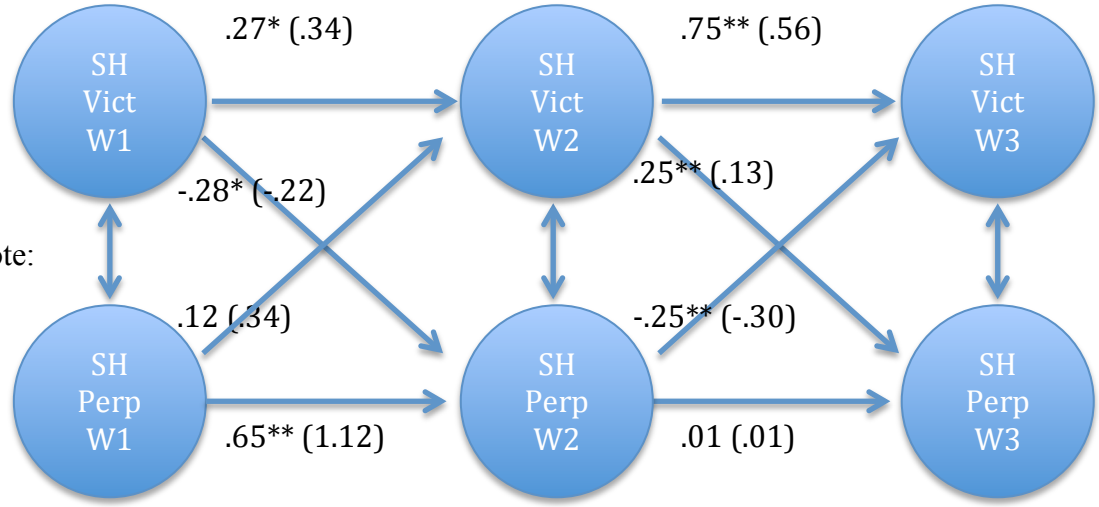
Note: Standardized coefficient (unstandardized coefficient), ** when p < .001, *when p < .01

Controls:
For Victimization W3, race was not significant and gender was significant (Female β = -.08, p <.01)
For Depression W3, race was significant (African American β = -.17, p <.001) and gender was significant (Female β = .28, p <.001)
For Alcohol and Other Drug W3, race was significant (Hispanic β = -.09, p <.01) and gender was not significant

Figure 15

Cross-lagged Sexual Harassment Model

Model Fit
χ^2 = 4637.29, p <.001
RMSEA = .04, p = ns
CFI = .79
TLI = .77



Note:

Standardized coefficient (unstandardized coefficient), ** when p < .001; *when p < .01. Some pathways included in the model did not load significantly.

-.28* and .25** are standardized coefficients for the pathways from victimization to perpetration, while .12 and -.25** are the coefficients for perpetration to victimization.

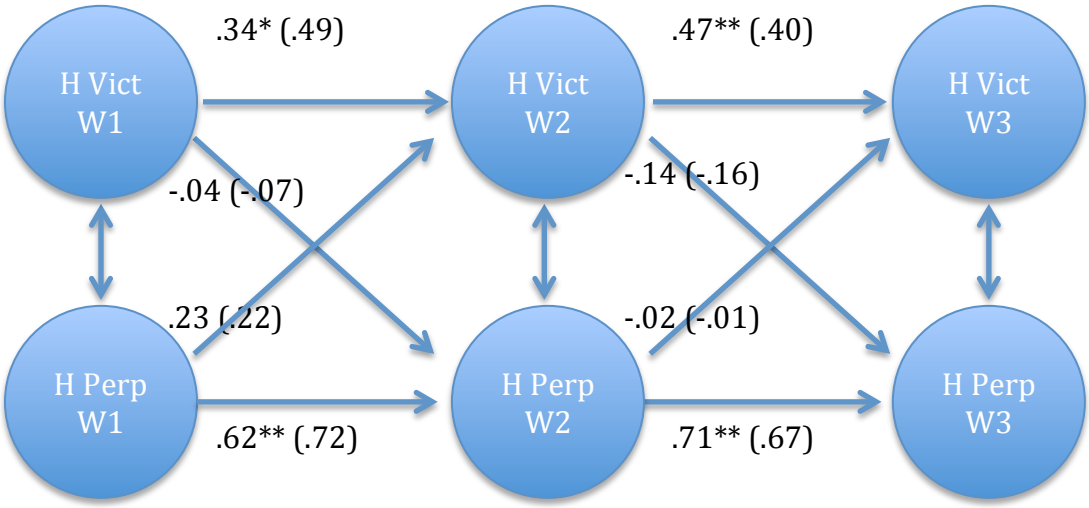
Controls:
For Victimization W3, race was not significant and gender was significant (Female β = -.11, p <.001)
For Perpetration W3, race was significant (African American β = .08, p <.01) and gender was significant (Female β = -.15, p <.001)

Correlations within waves:
Victimization W1 with Perpetration W1 β = .41, p <.001
Victimization W2 with Perpetration W2 β = .74, p <.001
Victimization W3 with Perpetration W3 β = .73, p <.001

Figure 16

Cross-lagged Homophobic Harassment Model

Model Fit
χ^2 = 6755.80, p <.001
RMSEA = .06, p < .001
CFI = .74
TLI = .71



Note: Standardized coefficient (unstandardized coefficient), ** when p < .001; *when p < .01. Some pathways included in the model did not load significantly.

-.04 and -.14 are standardized coefficients for victimization to perpetration, while .23 and -.02 are coefficients for perpetration to victimization.

Controls:
For Victimization W3, race was not significant and gender was not significant
For Perpetration W3, race was not significant and gender was significant (Female β = -.10, p <.001)

Correlations within waves:
Victimization W1 with Perpetration W1 β = .60, p <.001
Victimization W2 with Perpetration W2 β = .75, p <.001
Victimization W3 with Perpetration W3 β = .64, p <.001